Mellifil Page 1

	GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
OM nucleic - nucl	nucleic search, using sw model
Run on:	March 7, 2002, 23:39:32 ; Search time 5957.55 seconds (without alignments) 7094.489 Million cell updates/sec
Title: Perfect score: Sequence:	US-09-911-667A-1 2562 1 cccacgcgtccgggctttgttgaggactgagngccaagtg 2562
Scoring table:	IDENTITY_NUC Gapop 10.0 , Gapext 1.0
Searched:	1472140 seqs, 8248589755 residues
Total number of l	hits satisfying chosen parameters: 2944280
Minimum DB seq le Maximum DB seq le	length: 0 length: 200000000
Post-processing:	Minimum Match 0% Maximum Match 100% Listing first 45 summaries
Database :	GenEmbl:* 1: 9p_bas:* 2: 9p_btg:* 3: 9p_btg:* 4: 9p_on:* 5: 9p_pt:* 6: 9p_pt:* 6: 9p_pt:* 7: 9p_ph:* 8: 9p_pt:* 11: 9p_sts:* 11: 9p_sts:* 11: 9p_sts:* 11: 9p_sts:* 11: 9p_sts:* 11: 9p_vi:* 11: 9p_vi:* 11: 9p_vi:* 11: 9p_vi:* 12: em_pt:* 13: 9p_vi:* 14: 9p_vi:* 15: em_pt:* 16: em_tun:* 17: em_tun:* 18: em_tun:* 19: em_ov:* 20: em_ov:* 21: em_ov:* 22: em_pt:* 23: em_pt:* 24: em_pt:* 25: em_sts:* 26: em_sts:* 27: em_sts:* 28: em_ttgo_inn:* 31: em_htgo_inn:* 31: em_htgo_inn:* 32: em_htgo_inn:* 33: em_htgo_inv:* 34: em_htgo_inv:* 35: em_htgo_inv:* 36: em_htgo_inv:* 37: em_htgo_inv:* 38: em_htgo_inv:* 39: em_htgo_inv:* 31: em_htgo_inv:* 32: em_htgo_inv:* 33: em_htgo_inv:* 34: em_htgo_inv:* 35: em_htgo_inv:* 36: em_htgo_inv:* 37: em_htgo_inv:* 38: em_htgo_inv:* 39: em_htgo_inv:*
Pred. No.	is the number of results predicted by chance to have a

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Description	3 Ratt	393 Ното	ошон 969	Sinor	ACOU4642 DIOSOPALI ACO20509 Drosophil	Drosc	Deinc	enori	AC067757 Homo sapi	AE008141 Agrobacte	AB026645 Arabidops Ac024128 Arabidops	Pseudomo	AF060174 Rattus no AF052188 Homo sapi	AB018278 Homo sapi	123403 Discopyge o	AB018279 Homo sapi	L10362 Rattus norv	Bacillu	Sequence	AE007908 Agrobacte	enorhabd	AB050935 Pseudomon	AE004638 Pseudomon AL122031 Drosophil	2886	AL122030 Drosophil	ຸັລ		- 4	A48158 Sequence 5	Z65016 H.Sa A1442105 Or	L01788 Rattus	L05435 Rat X98334 R.n	13	ROD 21-NOV-1998 otein (SVOP) mRNA, complete cds.	Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae;	.C. d synaptic vesicle protein, ns of synaptic vesicles	
ID	F06017		AC011596	AE007266	AC004642	AE003462	AE001863	CEK01F9	AE004/6/ AC067757	AE008141	AB026645	AF218267	AF060174	AB018278	DYGSV2TRAN	AB018279	RATSV2BA	AB000617 BSHB0002	AX079057	AE007908	AB000/35 CE2K637	AB050935	AE004638 DMRR421.18		DMBR18C8	AE003438 S47919	AF305325	SC7H1	A48158	HS18A12R	RATSV2A	RATSV2AA RNOCTK	ALIGNMENT	mRNA 2 related protu 57	Chordata; Cra Rodentia; Sc	Sudhof,T conserve functio	69-9281 Sudhof, T
Length DB	2421	12183 2	3481 2	11856 1	3432 3	00542 3	98677 1	9834 3	2204 2	1286 1	æ ?	3462 1	10	י סי	n c	ש מי	3660 10	٦-	2268 6		1 6//9	7424 1	1886 1	37221 2	77	3868 4	7080 1		1885 6	σ,	3663 10	3844 10 2132 10		2421 bp vegicus SV2 GI:390126	vegicus Metazoa; Eutheria;	s 1 to 2421) Hofmann, K. and evolutionarily novel transport	ci. 18 (22), 1 to 2421) Hofmann, K. 8
Query ore Match	.2 57.	18.	.4.	91 3.	. .	. 4	89 3.	84 3.	n m	77 3.	25	70 2.	2.	, v,	2 2 5 5 5 5	7 6	6 2.	oi c		2.4 2.	9.1	9.8	9.2	.2	\(\frac{1}{2}\)	7. 7.	.6	4.	.2.	2.4	7 8.	0.8 2.0		AF060173 Rattus nor AF060173	+ H	ractus. 1 (bases Janz,R., H SVOP, an e	J. Neurosc 99019745 2 (bases Janz, R., H
Result No. Sco	1 145	47	4 21		œ 6	oc	,	•	11 8		<i>د</i>		9 2	o 0	0 0	7 7 7	33	24	26	2	e 4	30 2	1 5	3.	34 5	חנח	7 5	80 c	0 0	1 5	3.6	44 5		RESULT 1 AF060173 LOCÚS DEFINITION ACCESSION VERSION KEYWORDS	SOURCE ORGANISM	REFERENCE AUTHORS TITLE	JOURNAL MEDLINE REFERENCE AUTHORS

```
1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1601
                                                                                                                                                                                                                              817
                                                                                                                                                                                                                                                                                                                     877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1477
                                                                                              641
                                                                                                                                      757
                                                                                                                                                                                   701
                                                                                                                                                                                                                                                                             761
                                                                                                                                                                                                                                                                                                                                                                                                            937
                                                                                                                                                                                                                                                                                                                                                                                                                                                       881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 997
                                                 697
                                                                                                                                                                                                                                                                                                                                                                  821
       581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οqα
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ΩÝ
                                     Dp
                                                                                              ò
                                                                                                                                 Q
                                                                                                                                                                          ò
                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                      Proceduralist
// (Codon_start=1
// product="Sv2 related protein"
// product="Sv2 related protein"
// product="Sv2 related protein"
// product="Sv2 related protein"
// db_xref="G1:3901268".1"
// db_xref="G1:3901268"
// db_xref="G1:3901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13;
Direct Submission

L Submitted (16-APR-1998) Center for Basic Neuroscience, Department of Molecular Genetics, HHMI, UT Southwestern Medical Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75235, USA

Location/Qualifiers

Location/Q
                                 Neuroscience, Department
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gcttggatggctgatgccatggagatgatgatcctcagcatcctggcaccacagctgcat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ggeteatectggegeagegeggaeatggaggaggaettatteeagetaaggeagetgeeg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ggggcagctgtgcccaaggagtttgccaatcccaccgatgatactttcatggtggaagat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tgcgagtggaggctcccaagctggcaggtggcattgctgacctcggtggtctttgtaggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 2421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                57.0%; Score 1459.2; DB 10;
larity 83.0%; Pred. No. 0;
Conservative 0; Mismatches 343; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
es 1825; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Match
                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Mat
Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       521
                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                          CDS
                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DP
DP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Oy
Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Dp
```

1360 760 820 966 816 640 700 aaactcatcatctccagacaggaagaccgaggcaaaatgagggacctttcacacccat gtttacagtggctgctgctcctggctgcctggcctcctgctttttgcccattgagacc 1661 ò

qq

qq

q

ò

Ω

qq

ò

g ò g ò q ò g ò q δ g

ò

```
/product="hypothetical protein"
/product="hypothetical protein"
/protein_id="CAB94878.1"
/db_xref="81:865565878"
/db_xref="81:865565878"
/translation="LCFVIFSFCSLLFICVGRNVLTLLFIARAFISGGFQAAYVYT
PEVYPTATRALGLGTCSGMARYGALIPFIAOWALESSYXLTLAVYSGCCLLAALASC
FLPFERGRGLQESSHREWGQEMVGRGMHGAGVTRSNSGSQE"
2064. . . 2069
                                                                                                                                                                                                                                                                                                                       7
                                                                                                                                                                                                                                                                                                                                                                                                        1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  900
                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                        1575 gcagcggcatggcaagagtgggtgctctcatcactccgttcatcgcccaggtgatgctgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 agigggccaggagatggtcgggccgaggaatgcacggtgcaggtgtaccaggtcgaact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1815 ctggctctcaggaatagtgaccgatgggggactgagctggtctttgaggctgcagagctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421 CTGCCTCTCAGGAATACTGACCGATGGGGGACTGACTGTCTTTGAGGCTGCAGACTTT
                                                                                protein (Rattus
                                                                                                                                                                                                                                                                                                                       5:
                                                                                                                                                                                                                                                                                           Length 2104;
                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                         Score 1118; DB 9;
Pred. No. 2.7e-281;
0; Mismatches 17;
                                                                                  related
                                                                                                                                                                                                                                      909
                                                                                  SV2
     /tissue_type="amygdala"
                                                                /gene="DKFZp761H039"
/note="similarity to
norvegicus)"
                                         /gene="DKF2p761H039
                                                                                                                                                                                                                                        579 9
/dev_stage="adult"
                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 98.4%;
Matches 1149; Conservative
                                                                                                                                                                                                                                         557 c
                                                       .437
                                                                                                                                                                                                                                         462
                                                                                                                                                                                                            polyA_signal
polyA_site
BASE COUNT 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1995
                                                                                                                                                                                                                                                                                                                                                                                                            1455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1755
                              gene
                                                         CDS
                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This clone (DKFzp761H039) is available at the R2PD in B-11in. Please contact the R2PD: Ressourcenzentrum, Heubnerweg 6, 14059 Berlin-Charlottenburg, GERMANY: Email: clone@rzpd.de Further information about the clone and the sequencing project is available at http://www.mlps.biochem.mpg.de/proj/cDNA/.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Martinstied, GERMANY
Clone from S. Wiemann, Molecular Genome Analysis, German Cancer
Research Center (DKFZ); Email s.wiemann@dkfz-heidelberg.de;
Sequenced by LMU (Ludwig Maximilians University,
Munich/Germany) within the cDNA sequencing consortium of the German
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
Eukaryota: Metazoa: Chordata; Craniata: Vertebratu; Euteleostomi;
Eukaryota: Metazoa: Chordata; Catarrhini; Hominidae: Homo.
1 (bases 1 to 2104)
Blum,H., Bauersachs,S., Mewes,H.W., Weil,B. and Wiemann,S.
Direct Submission
Submitted (15-JUN-2000) MIPS, Am Klopferspitz 18a, D-82152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="DKRZp761H039"
/clone="T61 (synonym: hamy2). Vector pSportl; host
DH10B; sites Not1 + SalI"
                                                                                                                                                          1900
                                                                                                                                                                                                                                         2073
                                                                                                                                                                                                                                                                     2011
                                                                                                                                                                                                                                                                                                                                                                                  2129
                                                                                                                                                                                                                                                                                                                                                                                                                                      2130 tcagacaccaccagagtcacccggccaaaccctcagtgaacaac-caaaatatctctct 2188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGCAGATGTCACGTGGTTACCCAGTCATACCCTTGGAGAGCCACTGTCCAAAGATCTCC 2309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HSM802697 2104 bp mRNA PRI 18-JUN-2000
Homo sapiens mRNA; cDNA DKFZp761H039 (from clone DKF2p761H039)
AL3S9592
                                                          ggaatgcacggtgcaggtgttaccaggtcgaactctggctctcaggaatagtgaccgatg
                                                                                                                                                                        1957 GGAG-TTGAGCTGGTCTTTGAGGC--CGGAGCCTAGAAAGCTGGCGAGCCCAGCTGGC
                                                                                                                                                                                                                             gttttgtgtcttgactcagttt-gctcatcttcattgagg-----tccacccagggat
                                                                                                                                                                                                                                                                                    gtggatctacatyggaagactacccatattaggagggtctggtaatgccagcaacca--a
                                                                                                                                                                                                                                                                                                                                                                                                2190 GFGGATCTGCATGGGGGAAGCTGCTAGTGTGGGAGGGTCCCAGGGCGCTCAGGCCAGCT
    aaagggggaggactgcaggagtccagccaccgggagtggggccaggagtggtcggccga
                                                                                                                              GGGACAAACAGCACAGGCGTCCCAGGTCGAACTCTGGCTCTCAGGAGTAGTGACCCCTG
                                                                                                                                                           ggggactgaqctggtctttgaggctgcagagcttggggggctggcaggccccaactgggg
                                                                                                                                                                                                                cactgattgtcactgccgacatcaagaac-tcacccaagagtatgacctggaccaacagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GI:8655658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genome Project.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AL359592.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                      1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2250
                                                                                                                                                                                                                                                                                                                                                                                  2072
                                                                         1837
                                                                                                                                 1897
                    1777
                                                1721
                                                                                                     1781
                                                                                                                                                             1841
                                                                                                                                                                                                                 1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HSM802697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
```

COCUS

g

q ò Dp δ qq ŏ

ò

```
172213
                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mammalia, Eutheria; Primates; Catarrhini; Hominidae; Homo.

I (bases 1 to 21218)

Mizny, D.M., Adams, C., Adio-Oduola, B., Ali-osman, F.R., Allen, C.,

Alsbrooks, S.L., Amaratunge, H.C., Are, J.R., Banks, T., Barbaria, J.,

Benton, J., Bimage, K., Blankenburg, K., Bonnin, D., Bouck, J.,

Bowie, S., Brieva, M., Brown, E., Brown, M., Bryant, N.P., Buhay, C.,

Burch, P., Burkett, C., Burrell, K.L., Byrd, N.C., Carron, T.F.,

Carter, M., Cavazos, S.R., Chacko, J., Chard, C.D., Cox. C.,

Coyle, M.D., Dathorne, S.R., David, R., Davila, M.L., Davis, C.,

Davy-Carroll, L., Dederich, D.A., Delaney, K.R., Delgado, O.,

Dann, A.L., Ding, Y., Dinh, H.H., Douthwaite, K.J., Draper, H.,

Dugan-Rocha, S., Durbin, K.J., Farrhart, C., Edgar, D., Edwards, C.C.,

Elhaj, C., Escotto, M., Falls, T., Ferraguto, D., Flagg, N., Ford, J.,

Foster, P., Frantz, P., Gabis, A., Gao, J., Garcia, A., Garner, T.,

Garza, N., Gall, R., Gorrell, J.H., Guevara, W., Gunaratne, P., Hawes, A.,

Hernandez, J., Hernandez, O., Hodgson, A., Hogues, M., Holloway, C.,

Jackson, L.E., Jacobson, B., Jia, Y., Johnson, R., Jolivet, S.,

Joudah, S., Karlsson, E., Kelly, S., Khan, U., King, L., Korvah, J.,

Kovar, C., Kratovic, J., Kureshi, A., Lucier, R., Lucier, R., Luua, R.,

Martinez, E., Massey, E., Mawhiney, E., McLeod, M. P., Meador, M.,

Martinez, E., Massey, E., Mawhiney, E., McLeod, M. P., Meador, M.,

Martinez, E., Massey, E., Mawhiney, E., McLeod, M. P., Meador, M.,

Martinez, S., Mauven, M., Morren, M., Nickerson, F., Noverson, J.,

Mauven, A., Mouven, M., Norven, M., Mershard, M., Mershard, M., Mershard, M., Mershard, M., Mershard, M., Mershard, M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2115 aatgecagcaaccaatcagacaccaccagagtcacccggccaaaccctcagtgaacaac 2174
                                                                                                                                                                                                                                                                                                          ttgcaggcgatctaggtgtggtctgagcagctatttcctggcaggggccccccggtttgc 2354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1021 CCACATGCCCCCACCCCACCCCCCTCTGGAGTTG-CCGTTGTTGGCACCAAGAGATCCAGA 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2475 tgtgtcctgggggacagctgggtcttgcaccaggtgacaacctcaaaacgccgttaccccc 2534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1080 TGTGTCCCTGGGGACAGCTGTCTTGCACCAGGTGACACCTCAGAACGCCGTTACCCCC 1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           901 Trecadecearcradererestraterereaccaseratrecradeagececeeececeggrige 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC087893 212183 bp DNA HTG 26-JUN-2001
Homo sapiens chromosome 12q clone RP11-423G4, WORKING DRAFT
SEQUENCE, 18 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nguyen, A., Nguyen, N., Nguyen, N., Nickerson, E., Nwokenkwo, S.,
                                                                         721 AATGCCAGCAACCAATCAGACACCACCCAGAGTCACCGGGCCAAACCCTCAGTGAACAAC
                                                                                                                                                   2175 caaaatatetetetgtagatacegteeaggeteaggeeeatgtgacaeetgetgteeaee
                                                                                                                                                                                        2415 ccacatgccccaacccagcccctnttggagttgccgttgttggcaccaagagatccaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tggggaactgaggactgagngccaagtg 2562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1140 T-GGGAAC::GAGGACTGAGGCCAAAGTG 1166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HTG; HTGS_PHASE1; HTGS_DRAFT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC087893.7 GI:14328965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                              2235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC087893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
```

RESULT

g

qq

ò

g ŏ

δλ

SOURCE

```
Oguh, M., Okwuonu, G., Oragunye, N., Oviedo, R., Pace, A., Payton, B., Peery, J., Perers, L., Pickens, R., Primus, E., Pu.L., Quiles, M., Ren, Y., Rives, M., Rojas, A., Rojubokan, I., Rolfe, M., Ruiz, S., Savery, G., Scherer, S., Scott, G., Shen, H., Shooshtari, N., Stone, H., Sutchor, A., Stanerisa, A., Tamerisa, A., Tamerisa, C., Tang, H., Tansey, H., Tansey, J., Taylor, C., Taylor, T., Talfrod, B., Thomas, N., Thomas, S., Usmani, K., Vasquez, L., Vera, V., Villalon, D., Vinson, R., Watlington, S., Warten, Malliams, G., Walliams, G., Walliamson, A., Wheczyk, R., Wooden, S., Worley, K., Wu, C., Wu, Y., Wu, Y.F., Zhou, J., Zorrilla, S., Nelson, D., Unbulished Lebas, R., Roylor, R., Roylor, R., Mullished Lebas, R., Roylor, R., Wullished Lebas, R., R., Roylor, R., Wullished Lebas, R., R., Roylor, R., Roylor, R., Wullished Lebas, R., R., Roylor, R., Ro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).
OvoTE: This is "working draft' sequence. It currently
consists of 18 contigs. The true order of the pieces
is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequencing vector: Plasmid; M77789
Chemistry: Dye-terminator Big Dye: 100% of reads
Assembly program: Phrap; version 0.990329
Consensus quality: 201526 bases at least Q40
Consensus quality: 205774 bases at least Q30
Consensus quality: 206774 bases at least Q30
Estimated insert size: 205251; sum·of-contigs estimation
Quality coverage: 0x in Q20 bases; sum·of-contigs estimation
Quality coverage: 5.3x in Q20 bases; sum·of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (06-FEB-2001) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA On Jun 8, 2001 this Sequence Version replaced gi:13928634.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NOTE: Estimated insert size may differ from sequence length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         arbitrary, Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of 27796 bp in length
unknown length
of 20257 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unknown length
of 10690 bp in length
unknown length
of 12507 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of 41137 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            lèngth
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown length
of 14851 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center: Baylor College of Medicine
Center code: BCM
Web site: http://www.hgsc.bcm.tmc.edu/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown length
of 9738 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of 9758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: hgsc.help@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Center clone name: RP11-423G4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Center project name: HCHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    contig co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 212183)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            41237:
69033:
69133:
89390:
89490:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100180:
100280:
112787:
112887:
127738:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41137:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        127838:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    137576:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           137676:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   145046:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          145146:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  54832:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                172312:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              54932:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     64690:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Worley, K.C.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        41238
69034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           69134
89391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                112788
112888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    127739
127839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          137677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                41138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  145147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              89491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              154833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 164691
164791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           137577
```

```
Mammalia Butcheria: Primates; Catarrinii; Hominidde; Homo.

Manmalia: Butcheria: Primates; Catarrinii; Hominidde; Homo.

Alsbrooks, Li. Amaratunge, H.C., Are, J.R., Banks, T., Barbaria, J.,
Bentcon, J., Blange, K., Blankenburg, K., Bonnin, D., Bouck, J.,
Bentcon, J., Blange, H.C., Are, J.R., Banks, T., Barbaria, J.,
Bentcon, J., Chawdhry, I. Christopoulos, C., Claveland, C.D., Cox, C.,
Carter, M. Cavacos, S. R., Chacko, J., Chawel, D., Chen, G., Chen, R.,
Carter, M. Dathorne, S.R., David, R., Davila, M.L., Davis, C.,
Coyle, M.D., Dathorne, S.R., David, R., Davila, M.L., Davis, C.,
Dany, Carroll, L., Dederich, D.A., Delaney, K.R., Delgado, D.,
Denn, A.L., Ding, Y., Dulbin, H. H., Douthwaite, K.J., Draper, H.,
Dougan Rocha, S., Durbin, K. J., Earnbart, C., Edgar, D., Edvards, C.,
Elhaj, C., Escotto, M., Falls, T., Ferraguco, D., Flagg, N., Ford, J.,
Foster, P., Frantz, P., Gabisi, A., Gao, J., Garcia, A., Garner, T.,
Foster, P., Frantz, P., Gabisi, A., Gao, J., Garcia, A., Garner, T.,
Foster, P., Frantz, P., Gabisi, A., Gao, J., Garcia, A., Garner, T.,
Foster, P., Frantz, P., Gabisi, A., Gao, J., Garcia, A., Garner, T.,
Foster, P., Frantz, P., Gabisi, A., Gao, J., Garcia, A., Garner, T.,
Foster, P., Henrandez, O., Hadgon, A., Hogues, M., Holloway, C.,
Hanilton, K., Harris, C., Harris, K., Harris, K., Hulyk, S., Hume, J.,
Hanniton, E., Jacobson, B., Jia, Y., Johnson, R., Jollews, M.,
Joudah, S., Karlsson, E., Kally, S., Khan, U., King, L., Korvah, J.,
Louiseged, H., Lozado, R.J., Lu, X., Lucter, A., Lucier, R., Luna, R.,
Louiseged, H., Lozado, R.J., Lu, X., Lucier, A., Lucier, R., Martinez, E., Massey, E., Mawhiney, E., Machiney, E., Machiney, E., Machen, M., Muyven, N., Nuyven, M., Sodergren, E., Soadergren, S., Saarery, G., Scherer, S., Soatery, M., Stantey, H., Stooshtari, V., Tang, H., Stang, J., Tang, H., Tanssy, J., Taylor, C., Taylor, T., Tang, H., Stand, M., Malliams, G., Walliams, G., Walliams, G., 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Center project name: RP11-11787

Center clone name: RP11-11787

Center clone name: RP11-11787

Sequencing vector: M13; L08821

Chemistry: Dye-terminator B19 Dye: 100% of reads
Assembly program: Phrap: version 0.990329

Consensus quality: 21849 bases at least Q40

Consensus quality: 21849 bases at least Q20

Consensus quality: 216913 bases at least Q20

Estimated insert size: 193550; sum-of-contigs estimation

Quality coverage: 9.2x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Worley,K.C.
Direct Submission
Submitted (08-OCT-1999) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA on Jul 30, 2001 this sequence version replaced gi:14547725.
                                                                    Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu
AC011596.22 GI:15029431
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Center: Baylor College of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---- Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 183481)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Center code: BCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
                                                                                                                                                             AUTHORS
    VERSION
KEYWORDS
                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       68423 GAAGGGATGCTTTCACCGACCCGTGTCTCCCTAGGTGATGCTGGAATCCTCTGTG 68482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           68842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               agggat-ggggagatgtttgctctaggggggttctctgtatatgtygtgaaagctttgttc 2064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2065 ataacctgtggatctacatgggaagactacccatattaggagggtctggtaatgccagca 2124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1586 gcaagagtgggtgctctcatcactccgttcatcgcccaggtgatgctggaatcctctgtg 1645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A HTG 31-JUL-2001 clone RP11-117B7, WORKING DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 212183;
                                                                                                                                                                                                                                                                                                                                                                                                                   t 1798 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                     bp in length
                                                                                                                                                                bp in length
                                                                                                                                                                                                             bp in length
                                                                                                                                                                                                                                  length
bp in length.
                                                                           in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           68963 ACAATIC--AAACCCATCAAACTCACCCGGTCAACCCT 68999
                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2125 accaatcagacaccaccagagtcacccggccaaaccct 2163
                                                                                                   length
                                                                                                                                               length
                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 472.6; DB 2;
Pred, No. 1.2e-112;
0; Mismatches 51;
                              contig of 6177 b
gap of unknown 1
contig of unknown 1
gap of unknown 1
gap of unknown 1
contig of 5064 b
gap of unknown 1
                                                                                                                                                                                                          contig of 5968 t
gap of unknown l
contig of 2197 t
                                                                                                                                                                                                                                                                                                                                                                                                                   50442 g 54260
                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AC011596 183481 bp DNA
Homo sapiens chromosome 12 cl
SEQUENCE, 8 unordered pieces.
AC011596
                                                                                                                                                                                                                                                                                                                                                                                         /clone="RP11-423G4"
50102 c 50442 q
                                                                                                                                                                                                                                                                               Location/Qualifiers
1. .212183
                                                                                                                                                                                                                                                                                                                                                                        /chromosome="12g"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18.48;
90.78;
                                                                                                                     198654:
                                                                                                                                                                                                                                                              212183:
                                                                                                                                                                  203818:
                                                                                                                                                                                            203918:
                                                                                                                                                                                                                 209886:
                                                                                                                                                                                                                                         209986:
                                                                                                   193792:
                                                      85650:
                                                                                193692:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                 179374
185551
185651
193693
193793
198655
198755
                                                                                                                                                                                                               203919
209887
                                                                                                                                                                                                                                                              209987
                                                                                                                                                                                                                                                                                                                                                                                                                       ď
                                                                                                                                                                                                                                                                                                                                                                                                                     55581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Simi
Matches 525;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC011596/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
```

qq

ò g ò Op òy

ò

Db

qq

οy

οy

qq

ò Q δ

QQ δ q

```
/translation-"MLIAAARQLEKGRWTTTTVDDALDRAGTGTYQRRLMAIFGLVWA
ADAMQVLAGFFAASIAATFGLIVVQAAQAGTGTFFIJAMIFGAAGFGRENADRIGFRRYL
IATVACDAVFGLLSYRQQPFFYLLLRFLTGAAVGGTLPVDYAMMAFFLDARRGRWL
WMLEGFWAVGTLIYVALAAWAASLAGVADAWRYIFAVTAIPALIGVGLRFLVPESPLYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LRLGKTSEAKAIVDEILVVNGKMRLGAGASLVPPPPTASAGIFSADLRKRSLMILAIW
PLVSISYYGVFTWMPPRLAGEGFGFVRGYGFLVVLALAQIPGYALAAYGVEKWGRRPT
LIGFCLLSALGCLLFVAAGTAMLIGVSLLIMSFALLGTWGALYAYTPEI,YPTASRATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="glimmer prediction; global similarity to PhaA, a thoiolase from P. putida (GI:1857942); global similarity to acetyl-CoA acetyltransferase from C. acetobutylicum and A. eutrophus (GI: 1174677); Pfam domain homology to thiolase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product-"Probable thiolase"

/protein_id="AAK65491"

/db_xref="G1:14823917"

/translation="MNKQDPVVIVGQARTPLGSFOGELKDLSAADLGAAAIVDALKRA

GLAPDAVDEVWECVLTAGGOQAPARAALGALEPFOWGATTVNKMGGSRKAAMLAH

DLIKAESASIVVAGGWSKWINAPYLLIDRARGOYRTGHQKVLDHMFLDGLEDAYDKGRT

MGSFAEDCAEAYQFTRSAQDEYAIASLEKAQKASADGSFAEEIVPLISIASGKGERTVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MGAAGAMARLGGLLAPSLMGLVVAQSFGLAIGIFAGLLLVAAVAAFLIDAETRRVSLA
"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LDEQPQKARLDK I PLLKPAFRDGGT I TAANASS I SDGAAALVLMRRSAADKQG I GPLA
VICGHATHADAPS LFPTAP I GA I KALCRR I GWD I GEVDL FEI NEAFAVV PMAAMRELG
LDAEK VNVHGGACALGHPI GASGARV I VTLVNALRRRGLRRG I ASVC I GGGEATAVAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="glimmer prediction; global similarity to eukaryotic
3-hydroxyacyl-CoA type II (GI: 2569966); Pfam domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                function="Small molecule metabolism; Central intermediary
                                                                                                                                                                        Barnett, M.J., Fisher, R.F., Jones, T., Komp, C., Abola, A.P.,
Barnett, M.J., Fisher, R.F., Jones, T., Komp, C., Abola, A.P.,
Barloy-Hubler, F., Bowser, L., Capela, D., Galibert, F., Gouzy, J.,
Gurjal, M., Hong, A., Huizar, L., Hyan, R.W., Kahn, D., Kahn, M.L.,
Kalman, S., Keating, D.H., Palm, C., Peck, M.C., Surzycki, R.,
Wells, D.H., Yeh, K.-C., Davis, R.W., Federspiel, N.A. and Long, S.R.
Direct Submission
Submitsed (29-MAR-2001) Biological Sciences, Stanford University,
371 Serra Mall, Stanford, CA 94305, USA
Kalman,S., Keating,D.H., Palm,C., Peck,M.C., Surzycki,R.,
Wells,D.H., Yeh,K.-C., Davis,R.W., Federspiel,N.A. and Long,S.R..
Nucleotide sequence and predicted functions of the entire
Sinorhizobium mellioti pSymA megaplasmid
Proc. Natl. Acad. Sci. U.S.A. 98 (17), 9883-9888 (2001)
11481432
2 (bases 1 to 11856)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to BenK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="glimmer prediction; global similarity to BenK, benzoate transport protein in P. putida; Pfam domain homology to sugar and other transporters"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="Putative transmembrane transport protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /function="Small molecule metabolism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Sinorhizobium meliloti"
/strain="1021"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /plasmid="psymA"
complement(116. .1468)
/gene="skm1447"
complement(116. .1468)
/gene="skm1447"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /protein_id="AAK65448.1"
/db_xref="G1:14523916"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement(1918. .3108)
/gene="SMa1450"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(3133. .3900)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(3133. .3900)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="taxon:382"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(1918.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /qene="SMa1452"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="SMa1452"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="SMa1450'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         metabolism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1. 11856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EISG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                       PUBMED
                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                           TITLE
                                                                           //www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28349 GGCTTTGTCTCGTGGGCTGGTCCCCAGGGGCTCCCTCCCCCGAACAGCTGCTGCTCCAGGG 28290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28229 ACCACTACCATGTAAGGGCCATGAGAAGGGCTCATCCTGGCGCAGCGCGGGACATGGAGGA 28170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group; Rhizobiaceae; Sinorhizobium.

1 (bases 1 to 11856)
Barnett, M.J., Fisher, R.F., Jones, T., Komp, C., Abola, A.P., Barnott, M.J., Fisher, R.F., Gowser, L., Capela, D., Galibert, F., Gowzy, J., Gurjal, M., Hong, A., Huizar, L., Hyman, R.W., Kahn, D., Kahn, M.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          accactaccatgtaagggccatgagaaggctcatcctggcgcagcgcggacatyg3gg 192
                                               NOTE: Estimated insert size may differ from sequence length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-AUG-2001
of 121 of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13 ggetttgtetegtgggetggteeceageggeteecteecgaacagetgetgeteeaggg 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28169 GGACTTATTCCAGCTAGCAGCAGCTGCCGTGAGTATCATGGGGGCGAGCAAGAGGCAG 28113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ggacttattccagctaaggcagctgccggttgtgaaattccgtcgcacaggcgagag 249
                                                                                                                                                                           arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                            NOTE: This is a working draft' sequence. It currently consists of 8 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 183481;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         163322: contig of 16248 bb in length
162422: gap of unknown length
169856: contig of 7434 bp in length
169956: gap of unknown length
175682: contig of 5726 bp in length
175782: gap of unknown length
181009: contig of 5227 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     800 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                               98704: contig of 98704 bp in length 98804: gap of unknown length 127116: contig of 28312 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                gap of unknown length
contig of 18758 bp in length
gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AE007266 11856 bp DNA BCT Sinorhizobium meliloti plasmid pSymA section 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181109: gap of unknown length
183481: contig of 2372 bp in 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 211.4; DB 2
Pred. No. 2.5e-44;
0; Mismatches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     40879 c 40820 g 50703 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="RP11-117B7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complete plasmid sequence. AE007266 AE006469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /chromosome="12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GI:14523915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sinorhizobium meliloti.
Sinorhizobium meliloti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8.3%;
93.2%;
                                                                                                                                                                                                                                                                                                                                                                                                127216:
145974:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     146074:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 8.3
Best Local Similarity 93.2
Matches 221; Conservative
                                                                                                                                                                                                                                                                                                                                             98705
                                                                                                                                                                                                                                                                                                                                                                                                                         127217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               146075
162323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          169857
169957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                175683
175783
181010
181110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AE007266.1
                                                                                                                                                                                                                                                                                                                                                                                                   27117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        50279 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 5
AE007266/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Locus
```

g

g ò

òγ

ô a ò q

ø

```
/codon_start=1
/transl_table=11
/product="Putative muconate cycloisomerase"
/product="Putative muconate cycloisomerase"
/protein_id="AAK65455.1"
/db_xref="G1:14523923"
/translation="WKISWRYRPIULELKOPYHWSYGIRESFAVNI.IEIEADDGTV
GIGECTVARPOGTGAAITKRLAKHIVGHSPHDVAPLIARIFHGEYLGHGANIHRAANQ
IFSGIDMAWWDLOCKLAGLPVHQLLGGAHRKAVGYFYFLQGETAEELARDAAVGHAGG
ERYFYLKVGREEKLDLEITAAVRGETGDARLKLDARECWSVHIDAINWCRKLEKYDIEF
IEOPTVSWIIPAANAVRERVGIPIVANQAAFTLYDVYEICRORAADMICIGPREIGGI
OPWMKAAAVAEAAGIKICIHRSFTTGITTCARHHIGLAIPWLDDGNQIMWQLVQEDIV
/translation="MTPVETSWEEIEAVCLEALTLHGAAAETARAVAGAITRAFAGN
RVGGLYYLPIFCRHLAIGKVDGEAVPEVTTRGVTVTVDARSGFAHPAIAAGTPALIDL
                                                                                 LAFÄVPSKEGAPTIVVDQSMSAVTKTEMILRRDRGEAIPIGMAQDGNGQPTTDAATGL
EGSLLPAGGRKGANIALLVEVLAAALTGSALSTEASAFGNEEGGPPHVGQFLIAIDPD
HFAAGHFSEAMDNLVASHDAAGVRLPGHFGRKQPVCVDADLMKKAVLLSKSKNRQKPG
                                                          ARQAGLAAMAVRNSYNCLALGHHVRPLADAGLIGICVSNAPASVAPPGATRALFGTNP
                                                                                                                                                                                                                                                                                                        /EC_number="5.5.1.1"
/function="Small molecule metabolism; Central intermediary
                                                                                                                                                                                                                                                                                                                                                                                          /note="glimmer prediction; global similarity to muconate exploisomerase in P. putida (G1: 77758); Pfam domain similarity to mandelate racemase / muconate lactonizing enzyme family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /function="Cell processes; Transport of small molecules"
/note="glimmer prediction; global similarity to
choline-binding protein precursor from B. subtilis
(GI:7404430) and several putarive ABC transporter
proteins; adjacent ORFs encode other putative members of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1423 ACAATCACAGTAGACGATGCGCTCGATCGCGCCGCGCACGGGAACTTACCAGCGCAGACTG 1364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1243 ACGCTTTTCTTTCTCGGAATGCTGTTCGGCGCGCGGGTTTCGGCAGGCTCGCGGACCGG 1184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            443 tctgttctcactggcttggcttggatggctgatgccatggagatgatgtctcagcatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   actttcatggtggaagatgcagtggaagccattggctttggaaaatttcagtggaagctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1363 ATGGCCATATTCGGTCTGGTTTGGGCTGCCGATGCCATGCAGGTGCTGGCGGTCGGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          503 ctggcaccacagctgcattgcgagtggaggctcccaagctggcaggtggcattgctgacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1303 ACCGCCGCATCGATCGCCGCCACTTTCGCCTGACAGTTCCGCAGGCACTTCAGACGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       563 tcggtggtctttgtaggcatgatgtccagctccacgctctggggaaatatctcagaccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  623 tacggcaggaaaacagggctgaagatcagcgtgctgtggactctgtactatggcatcctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             683 agtgcatttgcgcccgtgtatagctggatcctggtgctccgggggcctggtgggcttcggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 11856;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.6%; Score 91; DB 1; Length 118
48.3%; Pred. No. 8.9e-13;
tive 0; Mismatches 335; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the choline transport system"
                                                                                                                                                                                                                                                                                                                                                                        metabolism; amino acids"
                                                                                                                                                                                                                                                       complement(7060. .8184)
/gene="SMa1461"
                                                                                                                                                                                                  complement(7060. .8184)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(8311. .9201)
/gene="SMa1462"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(8311. .9201)
/gene="SMa1462"
                                                                                                                                                                                                                             /gene="SMa1461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            324;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   383
                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /rans__table=11
/product == "utative transcription factor"
/product == "utative transcription factor"
/protein_id="AAK65451.1"
/db_xref="GI.1423919"
/translation="wrneKGPSHWERRIAPCFMDDTLECLRRHGYDAGPLLAQAGLP
SIVTGPVSANQYGAFWHAVAQAMDDEFFGEGARPMRAGSFALCHALLSTATLEHALR
RALRFLAVUENPHGELVVENCLAQIVLKDAGATRGAFAYRFWIILHGYNGWLIGRR
RALRFLAVVENPHGELVVENCLAQIVLKDAGATRGAFAYRFWIILHGYNGWLIGRR
RHAPANILVYRYHDAGLSAATIRGRLAGATRGAFAYRFWIILHGYNGWLIGRR
RHAPANILVYRYHDAGLSAATIRGRLAGATRGAFAYRFRIZAGGG
GTYRSTKEDLSRALAMEALAGGFTNVAQLAVELGFSEPSAFHRAFRKWTGKSPAGFRR
MATQTDFAESSSPRRRYQPDES"
                                                                                                                                                                                       PAAELGAAVRERNADVITNEADATAALAFAKOEFGHVHGLVNCAGTAPGEKILGRSGPH
ALDSFARTVAVNLIGTFNMIRLAAEVMSQGEPDADGERGVIVNTASIAAFDGQIGQAA
YAASKGGVAALTLPAARELARFGIRVVTIAPGIFDTPMMAGMPQDVQDALAASVPFPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="glimmer prediction"
/codon_start=1
/transl_table=11
/product="Hypothetical protein"
/protein_id="AAK65453.1"
/db_xref="GI:14523913.1"
/db_xref="GI:1452391470NELEYMDKGGKIAVQQVAVGFGMSKTQLAEF
AGLARETLYRPERSRGTKTQNRLREWLEIISRVTDWAGGKEQAMAMYRAQPLPAFGGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product-"Hypothetical protein"
/protein_id="AAK6545.1"
/db_xref="G1:14523920"
/translation="MRFTGTCYRAHDPRWAFKPASGDGAAIKGARFNPKGVKTLYLAL
STMTAVKEANOGFAHRIDPCYLGSYDIDCADIADLTAERGRAEHGVSLEEMAGSWAGA
FAEGRREASWAIYNRLHPRGTAGILVPSFAPGTEAGDRNLVLWTWGPDLPHRLDVYDP
SGRLPKDQLSWG"
                                                                                                                                                             'translation="MQLKSRVF1VTGASSGLGAAVTRMLAQEGATVLGLDLKPPAGEE
                                                                                                                                                                                                                                                                                                                                                                                                                 /function="Miscellaneous; Not classified regulator"
/note="glimmer prediction; global similarity to OruR from
v. aeruginosa (GI: 1657970) which regulates ornithine
utilization; pfam domain similarity to N·terminal
helix-turn-helix motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="glimmer prediction; global similarity to malate-dehydrogenase from M. fervidus (GI: 80950)"
                                                                                                                                                                                                                                                                              RLGRAEEYAALVKHICENTMLNGEVIRLDGALRMAPR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /function="Small molecule metabolism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="SMa1456"
/function="Miscellaneous; Unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement (5047. .5565)
/gene="SMA1455"
complement (5047. .5565)
/gene="SMA1455"
/function="Miscellaneous; Un
/note="glimmer prediction"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAEALVKDGKAAAVRDYLDHMALGGFA"
chain,
                                                                                                           /protein_id="AAK65450.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(5562. .5951)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(5562. .5951)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="SMa1459"
complement(6059.,7063)
                                                                                                                                     /db_xref="G1:14523918"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(6059. .7063)
short
                                                                           /product="Probable"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="Putative"
                                                    /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /transl_table=11
                                                                                                                                                                                                                                                                                                                       /gene="SMa1454"
3995. .5065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                    /gene="SMa1454"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="SMa1459"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="SMa1456"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
similarity to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                        5065
                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                             CDS
```

5

1063 GTCGGCGCCACACTGCCGGTCGACTATGCGATGATGGCGGAGTTCCTGCCGGCCCGGAAC 1004

/protein_id="AAK65454.1" /db_xref="GI:14523922"

```
/map="6081-60810"
/clone="Pls DS00543 (D193) and DS02867 (D200)"
/clone="Pls DS00543 (D193) and DS02867 (D200)"
/note="Algas extends from bp 1 to bp 83271 and d200 extends from bp 81802 to bp 148432.
a 34662 c 35252 g 39805 t
/organism="Drosophila melanogaster"
/db_xref="taxon:727"
/chromosome="2R"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC020509
                                                                                                                                                                                                                                                               38713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
AC020509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            For further information about this sequence, including its location and relationship to other sequences, please visit our sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (http://fruitfly.berkeley.edu/sequence-archive.html) or send email to drosophila@mhgc.lbl.gov.
Library locations: 63_6, 83_30.
Locations/oualifiers
1. .148432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
Submitted (01-MAY-1998) Berkeley Drosophila Genome Project, MS
44-121, Lawrence Berkeley National Laboratory, One Cyclotron Road,
Berkeley, CA 94720, US
Sequence submitted by:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (1997)
2 (bases 1 to 148432)
2 (bases 1 to 148432)
2 (clniker, S.E., Aghavani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Chew, M., Doyle, C.M., Farfan, D.E., Flanagan, J., Houston, K.A., Hummasti, S.R., Karrak, K., Kearney, L., Kin, S.H., Lee, B., Lomotan, M.A., Mazda, P., Mok, M.S., Moshrefi, A.R., Moshrefi, M. Mazda, P., Mok, M.S., Pfeiffer, B., Punch, D., Snir, E., Twomey, B., Wan, K.H., Whitelaw, K.R., Yee, A., Zhang, R., Zieran, L.I., and Kimmel, B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta: Breryota; Metazoa; Arthropoda; Tracheata; Brachycera; Pterygota; Neoptera; Endopterygota: Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophiliae; Drosophila.

(bases 1 to 14843.)

Celniker,S.E., Aghavani,A., Arcaina,T.T., Baxter,E., Blazej,R.G., Chew,M., Doyle,C.M., Farfan,D.E., Planagani,J., Houston,K.A., Hummasti,S.R., Karra,K., Kearney,L., Kim,S.H., Lee,B., Lomotan,M.A., Mazda,P., Mok,M.S., Moshrefi,A.R., Moshrefi,M., Mixon,K., Pacleb,J.M., Park,S., Pfeiffer,B., Punch,D., Snir,E., Twomey,B., Wan,K.H., Whitelaw,K.R., Yee,A., Zhang,R., Zieran,L.L. and Kimmel,B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila melanogaster (Subclones in Sac from PI clones {\tt DS00543} (D193) and {\tt DS02867} (D200)) DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA DNA DNA DNA SEQUENCE (PIS DS00543 (D193) and DS02867 (D200)), complete Sequence (PIS DS00543 (D193) and DS02867 (D200)), complete Sequence. Acconsist Accoust Acco
                                                                                                                                                                                                                                                                                                                                                                                                                                     971 aggtatgatgtgctgtcagggaaccaggaaaaggcaatcgccaccttaaagagatagca 1030
                            911 ctctcagctgcccgctcctcctcttgccgtgctgtgtttctggctgcctgaaagtgca 970
                                                                                                                                                                                                             823 CTTATCTGCTCGCCTGGGAAAGACGTCCGAGGCGAAGGCCATCGTCGATGAGATCTCTC 764
                                                                                                                                                                      860 gtcctggctgtgttcgtgatgcccagc-----ctgggctggcgttggctgctcatc
                                                                                                                                                                                                                                                                                                                                         883 GTGACGGCAATCCCGGCATCGCCGTGGGTTTCCTGGTGCCCGGAATCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lawrence Berkeley National Laboratory, MS 64-121
Berkeley, CA 94720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Berkeley Drosophila Genome Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1031 actgaaaacgg 1041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCGTCAACGG 753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC004642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                      g
                                                                                                                                                                             ò
                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                                                                                     OD
                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OD
                                                 ò
```

source

```
SEQUENCING IN PROGRESS ***, in ordered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                        0;
                                                                                                                                                                                                                                                                                                                                             75364
                                                                                                                                                                                                                                                                                                                                          619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       380 gatactttcatggtggaagatgcagtggaagccattggctttggaaaatttcagtggaag 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submisted (30-DEC-1999) Celera Genomics, 45 West Gude Drive, Submitted (30-DEC-1999) Celera Genomics, 45 West Gude Drive, Rockville, MD, USA
This sequence was identified as CDM:10213488 by the submitter. For more information on this record e-mail to fly@celera.com.
* NOTE: This is a 'working draft' sequence.
* This sequence will be replaced
* by the finished sequence as soon as it is available and
* the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03-JAN-2000
                                             Gaps
                                                                                                                           Db 75185 GATACCTACACTGTTCAGCAGGCGATCAATGCCTTCGGTTTCGGATGGTTTCACGTCAAG
                                                                                                                                                                                             gatactttcatggtggaagatgcagtggaagccattggctttggaaaatttcagtggaag
                                                                                                                                                                                                                                                         500 atcctggcaccacagctgcattgcgagtggaggctcccaagctggcaggtggcattgctg
                                                                                                                                                                           ctgtctgttctcactggcttggcttggatggctgatgccatggaggtgatgatcctcagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Inse
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera;
Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
1 (bases 1 to 15781)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 157851;
Length 148432;
                                          ;
0
                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
41166 a 36910 c 37402 g 42373 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 89.4; DB 2;
Pred. No. 2e-12;
0; Mismatches 106;
Score 89.4; DB 3;
Pred. No. 2e-12;
); Mismatches 106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogašter,
                                               ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Adams, M. and Venter, J.C.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db 75425 AGATATGGCCGGAAGTCGG 75443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        G1:6664388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3.5%;
59.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                       cagtacggcaggaaaacag 638
      3.58;
59.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       157851 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 3.59
Best Local Similarity 59.13
Matches 153; Conservative
    Query Match 3.5
Best Local Similarity 59.1
Matches 153; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FC020509
AC020509.1 GI:666
HTG; HTGS_PHASE2.
fruit fly.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

```
/db_xref="FLYBASE:FBG0034905"
/db_xref="FLYBASE:FBG0034905"
/db_xref="FLYBASE:FBG0014505"
/db_xref="FG1:7291638"
/translation="MSSPLVLFTALLLVSSTICQGLPDLHKOMTPEOLOSVFHVDTHD
/translation="MSSPLVLFTALLLVSSTICQGLPDLHKOMTPEOLOSVFHVDTHD
/translation="MSSPLVLFTALLLVSSTICQGLPDLHKOMTPEOLOSVFHVDTHD
/translation="MSSPLVCFTALLVSSTICQGLPGPHQLHKOMTPSECKHEALA
SGGHHLFAPENSAIRSHNVSFSAFGGHLNLSLRATQGLFKGAPHQLRMMTVGSEPNAT
HGLDLOBIVHEOVSRVYSMSIQLKKIYHKRVY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="WRFETRDGRTISVNLALLEKSLVIREMCRVGQVPEDEDFVLPL
HGIHSNVLLKILLWAEVHEKHEEPAWVDSKDPLPAEEIELQISDWDKEFLRVEIDSIC
KIMEGCNYLDIPWLYKLCAOKLVFLSSREPETQFSGYVEKIPRFQDHFIEQIOKE"
complement(join(<26883. .27038,27100. .>27264))
                                                                                                                                                                                                                                                                                                                                                 complement(join(8417. .8923,14564. .14687,19965. .>20155))
                                                  2 (bases 1 to 300542)
Adams,M.D., Celniker,S.E., Gibbs,R.A., Rubin,G.M. and Venter,C.J.
                                                                                                              Direct Submission
Submitted (21-MAR-2000) Celera Genomics, 45 West Gude Drive,
Rockville, MD, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /evidence=not_experimental
complement(join(26883..27038,27100..27264))
/gene="CG13561"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="FLYBASE:FBan0011169"
/db_xref="FLYBASE:FBgn0034905"
complement(join(8417. 8923,14564. .14635))
/gene="CG11169"
                                                                                                                                                                                                                                                                        /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="FLYBASE:RBgn0034904"
/protein_id="RAF47061.1"
/db_xref="G1:7291639"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
/db_xref="FLYBASE:FBan0013561"
/db_xref="FLYBASE:FBgn0034906"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="FLYBASE:FBan0015800"
/db_xref="FLYBASE:FBgn0034904"
complement(<13286. .>13760)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/db_xref="FLYBASE:FBan0015800"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="FLYBASE:FBan0013561"
/db_xref="FLYBASE:FBgn0034906"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="FLYBASE:FBan0013561"
                                                                                                                                                                                                                                                                                                                                                                                                                      /product="CT31208"
/db_xref="FLYBASE:FBan0011169"
/db_xref="FLYBASE:FBgn0034905"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="FLYBASE:FBan0011169"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xr@f="FLYBASE:FBan0015800"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="FLYBASE:FBgn0034904"
complement(13287. .13760)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="CG13561 gene product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="CG15800 gene product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="CG11169 gene product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=not_experimental complement(<26883. >27264)
Science 287 (5461), 2185-2195 (2000)
20196006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(<8417. .>20155)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(<13286. .13760)
                                                                                                                                                                                                                Location/Qualifiers
1. .300542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="CT32939"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="CT15511"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /map="60A1-60A2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /map="60A1-60A2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /map="60A1-60A2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="CG13561"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="CG15800"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="CG11169"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="CG15800"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="CG13561"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="CG15800"
                                                                                                                                                                                                                                                                                                                                                                                             /gene="CG11169'
                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA
      JOURNAL
MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                             mRNA
                                                                                                 AUTHORS
                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                         FEATURES
                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Endrary ta Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Prerygota: Medpeters: Endopterygota; Diptera: Brachycera; Prerygota: Medpeters: Endopterygota; Diptera: Brachycera; Prerygota: Medpeters: Endopterygota; Diptera: Brachycera; Prerygota: Medpeters: Endoterygota; Diptera: Brachycera; Prerygota: Drosophildae; Drosop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AE003462 300542 bp DNA INV 04-OCT-2000 Drosophila melanogaster genomic scaffold 142000013386038 section 11
            DD 107182 GATACCTACACTGTTCAGGAGGGATCAATGCCTTCGGTTTCGGATGTTCACGTCAAG 107241
                                                                                                                                                                                                                                                            Db 107302 ATATTGGCCCCCTCTTTGTTCTGCGAGTGGAATGTCACAAGTTCCAGCAGGCATCCGTC 107361
                                                                                                                                                                                                                                                                                                                                                                          DD 107362 ACAACAGTGTTTTTGGGCATGATGTTGAGTTCCAGTTTTTGGACACAGTGAGCAAC 107421
                                                                                                                                                          Db 107242 CTGTCGCTCTTCGTGGGCCTCTGCTGGATGTCCGACTCCATGGAAATGGCCATTCTCAGC 107301
                                                                                                    ctgtctgttctcactggcttggcttggatggctgatgccatggagatgatgatgatcctcagc 499
                                                                                                                                                                                                                         500 atectggcaccacagetgcattgcgagtggaggctcccaagetggcaggtggcattgctg 559
                                                                                                                                                                                                                                                                                                                                                 560 acctcggtggtctttgtaggcatgatgtccagctccacgctctggggaaatatctcagac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of 15, complete sequence.
AE003462 AE002575
AE003462.1 G1:7291637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DD 107422 AGATATGGCCGGAAGTCGG 107440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Drosopiila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         620 cagtacggcaggaaaacag 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fruit fly.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AE003462/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
```

SOURCE

RESULT

ò

δŏ

δ

TITLE

ó

```
2 (bases 1 to 198677)
White,O., Eisen,J.A., Heidelberg,J.F., Hickey,E.K., Peterson,J.D., White,O., Eisen,J.A., Heidelberg,J.F., Hickey,E.K., Peterson,J.D., Dodson,R.J., Haft,D.H., Gwinn,M.L., Nelson,W.C., Richardson,D.L., Womffat,K.S., Qin,H., Jiang,L., Pamphile,W., Crosby,M., Shen,M., Vamathevan,J.J., Lam,P., McDonald,L., Utterback,T., Zalewski,C., Wakarova,K.S., Aravind,L., Daly,M.J., Mincon,K.W., Fleischmann,R.D., Ketchum,K.A., Nelson,K.E., Salzberg,S., Smith,H.O., Venter,J.C. and Fraser,C.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 white,O., Eisen,J.A., Heidelberg,J.F., Hickey,E.K., Peterson,J.D., Dodson,R.J., Haft,D.H., Gwinn,M.L., Nelson,W.C., Richardson,D.L., Moffat,K.S., Qin,H., Jiang,L., Pamphile,W., Crosby,M., Shen,M., Vamathevan,J.J., Lam,P., McDonald,L., Utterback,T., Zalewski,C., Makarova,K.S., Aravind,L., Daly,M.J., Fraser,C.M. et,al. Genome sequence of the radioresistant bacterium Deinococcus
                                                                                                                                                                                                                        Db 239139 GATACCTACACTGTCAGCAGCGATCAATGCCTTCGGATGGTTTCACGTCAAG 239080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (20-NOV-1999) The Institute for Genomic Research, 9712 Medical Center Dr. Rockville, MD 20850, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacteria; Thermus/Deinococcus group; Deinococcales; Deinococcus.
1 (bases 1 to 198677)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="similar to GB:AE000520 percent identity: 43.92; identified by sequence similarity; putative"
                                                                                                                                                 380 gatactttcatggtggaagatgcagtggaagccattggctttggaaaatttcagtggaag 439
                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AE001863 198677 bp DNA BCT 22-NOV-1
Deinococcus_radiodurans R1 section 2 of 2 of the complete
                                                                                                             ;
                                                                        Length 300542;
                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Deinococcus radiodurans"
                                                                    Score 89.4; DB 3;
Pred. No. 1.9e-12;
0; Mismatches 106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          radiodurans R1
Science 286 (5444), 1571-1577 (1999)
/gene="CG5543"
/note="CG5543 gene product"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="DRA0206"
complement(91..1926)
/gene="nn.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="DRA0206"
/nota="".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:1299"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Db 238899 AGATATGGCCGGAAGTCGG 238881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Deinococcus radiodurans.
Deinococcus radiodurans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GI:6460670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /strain="R1"
                                                                          3.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                620 cagtacggcaggaaaacag 638
                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AE001863 AE001825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          chromosome 2
                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AE001863.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20036896
2 (bases
                                                                                                                     Matches 153;
                                                                                Query Match
                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
AE001863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /map="60A2-60A2"
/db_xref="FLYBASE:FBan0004817"
/db_xref="FLYBASE:FBan0010278"
complement(join(29123. 29668,29729. 31300,31378. 31431))
/gene="Ssrp"
/note="Ssrp gene product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(join(28956. .29668,29729. .31300,31378. .31553))
      /evidence=not_experimental
/protein_id="AAF47062.1"
/bc.xref="G1:7291640"
/translation="MRMQLLKRASGYKPFLYNICQSDVCEYLEKRNHPFINIILSSFG
NRTNVNKCPIPPEIVLEHFRFPVKVLDMMPLPFGBYGLFTTFTFHRSELAQVKVYFTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="MGPAWOTYKTLNSGDEBFLAWAKYWIVYAFIVTFEVLADVFLSW
LPLYMPTKLLLVVWIVLSAPAANVWIFDAILRPVLAKRQEEIDHFLHRGKEKLLIDAL
ASMTQLVAQTQISVLPFVSSFWSRSSTAPLRTSDLLQDSTGEGIGGRTSEDTDSANVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VQNLSSGSSPVGSLEHLRDDSEELLVGVSKATTHLQAEOFOSDVSSEEPRIIRRFOR
KFRNAIAIASATKLEDLHDDVEDLLAKTAMETSGQEVRQQRQPASRRRLLAQSFVKPQ
TGL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="FLYBASE:FBan0005543"
/db_xref="FLYBASE:FBgn0034908"
<31845. .>33894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="FLYBASE:FBan0005543"
/db_xref="FLYBASE:FBgn0034908"
31927. .33894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="CT15471"
/db_xref="FLYBASE:FBan0004817"
/db_xref="FLYBASE:FBgn0010278"
complement(<28956. .>31553)
                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="FLYBASE:FBgn0034907"
/protein_id="AAF47063.1"
/db_xref="G1:7291641"
                                                                                                                                                                               /db_xref="FLYBASE:FBan0005539"
/db_xref="FLYBASE:FBgn0034907"
                                                                                                                                                                                                                                                                                                                                                                                               /db_xref-"FLYBASE:FBan0005539"
                                                                                                                                                                                                                                                                            /db_xref="FLYBASE:FBan0005539"
/db_xref="FLYBASE:FBgn0034907"
27558. 28397
                                                                                                                                                                                                                                                                                                                                                   /note="CG5539 gene product"/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="CT17560"
                                                                                                                                                               /product="CT17534"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /map="60A2-60A2"
                                                                                                                                                                                                                                                            /map="60A1-60A2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="Ssrp"
/note="CG4817"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .>33894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="CG5543"
                                                                                                                                                                                                                                                                                                                                   /gene="CG5539"
                                                                                                                           .>28397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="CG5543
                                                                                                                                           /gene="CG5539
                                                                                                                                                                                                                                      /gene="CG5539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="Ssrp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31845.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                         CDS
```

```
/translation="MIDPRRTEQVHPDYADLDTLAPDALIAALADDQLGAVRAVQAAA PQLTAALNAAVPQLERGGRLVYVGAGTSGRLGVLDATELTPFSWPEERAVELAGGE RATRQAVEGADDEAAGERLVYVGAATSGRAGVLIAVASGTTYVLGAARSGRAGALT VGLANNPGAPLLAAVDCPVLLDTGPETISGSTRLKAGTAQK TALNTLSSALWYRLGKLYGNLAWDDRATLAAVAGTELLDTGPETISGSTRLKAGTAQK TALNTLSSALWYRLGKLYGNLAWDDRATNAKLEDRARRLVQHATGADADAAQAALSECGGSVKTALVMLKLGLGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AYVQIAQGLERRI IESGELSAGTALPARRELAARIGVSRYTI.KQGLGLLEAEGLIRRRR
GSGTRVAGTPHTSRQLGLLSSFSDEVRAQGGVPGARVI.SFTQGRPTPQEALSLGLTAA
EQVYRLRRLRTSDGDPLAVEDSTLPAALIGPLTAQDVTDASI.YGLIGGRHLAPARAIR
HLRAQNASAELAHLLGVPLGAALITTERVSMLASGRPVEYARACYRGDRYDFVWDLRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APODVIDGODAWKANIEAMKDVPEATPADLEWAEAITESSPTREGGATSOMRAFIDTL
GGLWSSGKLANKTFSAMTSAQNVNGGQETTLQTLYMTAMHWGAVLTPPGYTDEVIFKS
GGNPYGASVTANGQPLLENDRASIRHQVRROVELTAKLLG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation = "MMSNNKTFSELVRKWYGCAVSSPAPLPPEPPAWWVALDPADAAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="similar to GB:M99166 SP:P30849 PID:148264 GB:U00096 PID:1651499 percent identity: 54.36; identified by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="MTAPVKLAIVFYSSTGTGYAMAQEAAEAGRAAGAEVRLLKVRET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     //octe="This region contains an authentic frame shift and is not the result of a sequencing artifact; similar to GB:L4203 SP:R4861 PID:1005712 PID:1220844 PID:1205001 percent identity: 56.04; identified by sequence similarity; putative" //gene="DRA0213" //gene="DRA0213" //gene="DRA0213"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="similar to GB:U00096 SP:P76535 P1D:1788768 percent identity: 63.89; identified by sequence similarity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/transl_table=11
/product="trp repressor binding protein WrbA, putative"
/protein_id="AAF12417.1"
/db_xref="G1:6460712"
                                                                                               /note="This region contains an authentic frame shift an is not the result of a sequencing artifact; similar to GB:AE000657 percent identity: 51.19; identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                              identified by sequence similarity; putative" /codon_start=1
LPTIGPLLYDSLLNKDQYTAMTLIMLSAFLLLIGNLLSDLALAWADPRVRYS" complement(5964. .7804)
/gene="DRA0210"
                                                                                                                                                                                                                                                                                                                                                                                                                                              /transl_table=11
/product="transcriptional regulator, GntR family"
/protein_id="AAF12419.1"
/db_xref="G1:6460714"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product-"conserved hypothetical protein"
/protein_id="AAF12418.1"
/db_xref="G1:6460713"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                by Glimmer2; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /transl_table=11
/product="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QEAAQRLEGAGGHARQVLGEGEALGTSAS"
complement(10796. 11398)
/gene="DRA0214"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement(10796. .11398)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11664. .12059
/gene="DRA0215"
11664. .12059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9857. .10774
/gene="DRA0213"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="DRA0214"
                                                                                                                                                                                                                                 7764. .8603
/gene="DRA0211"
                                                                                                                                                                                                                                                                                                     7764. .8603
/gene="DRA0211"
                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
                                               gene
                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/transl_table=11
/product="pepted ABC transporter, permease protein"
/protein_id="AAF12421.1"
/db_xref="G1:6460716"
/translation="MTGGPETRTPLOMAWRRYRKSRPGVIAGWVLJALYVIALLSPFL
APYNITTOHEGYEYGRPGPYHLIHGRHRPEVYGSTTRRDPVTFAKKTVPDTAHPLP
VOFFVKGEPYSFLGLGSDRHLEGVPDGQDEYGEKVPRYFFLFGTDQLGRDLFSRTLVG
AQVSMTVGVVVGLISFALGILLGGVSGYFGGWWDTLIQRVVEVLLSFPRLPILLALAT
LIPARMPSTWYTGIVAVLLGGMSGASLARVVRGQVLAARNLDYVSAAQAMGASNLRVI
LRHTPNLSSFLLVTATLALGYILGGRSTLSFLGIGIKEPMTSWGLLLRDASKLEVVS
SYPWLLMPGLFVPFSVLARPREGDALRDAADTQSR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="MLCCHMLNYTLRRILGMIPTLLVISVLCFLVIKLQPGSFIDQYL
EDPRESKETVANITRQLGLDQPAWRQYLMWITGVVTRLDFGYSFASGAPVTSIIGERL
GWTVFIAALTLALTWLIAVVLGIYTARNYGIPAQIANFLGYVGLAIPDFLAALLLLVV
LVRQLGGTWVGGLFFPDMIDAPWSFAKVLDLLAHLWIPVLAVGLEGVAGLMRQMRAST
LDVLSQDYIFTAKAKGLPQGRVIWKHAVRNAINPLISLAGLSLPTLISGTIIISIVWS
                                                                                                                                                                                                                                                                                                                                                                                                                          SHVFSDDELARYRRKQLEGYLAFLEWAAQWDAFQHWIYAEAFEDYTADLDAKWLELD
RTFHPFIDWSGLDESVRAKGWHYYHIFQVPFYYIEYAMCYLAAVAIWRAARQDPAAAL
GYRVDALRAYVSVPELYRAAGAEFRFDREYIRGLMGFLKEQLG"
COMplement (2005 . 3645)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AMN'NYTLY VOYGERGDCYCNNAAMPRTDDPEVPAGFDPLADV IAKAHAKD I EVNAM I I
TTALWNSVTPPKSAEHAFNTHGPNAAGRDNWLTVKADGTVKAGADWVLDPGHPDAAAY
I RNMYVSVAKNYAVDGIMFDRVRYPDYNPVGGPVQWGYNETALARY RAETGATGTPDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADPOWSAWRROOTTNLVRETALAVKAVKPGVAIAAATITYGEGPADEAAFAASRPYAE
VOODHLIWYKSGYLDONYMMYKRDRPYLQAOMEDONNTFAAGLRORYPHTEOVSGAA
IYLNDIASTYSOIRKYCOAGLGWAGYSYRTPDKDVNEGKRGAAEVLADLKLRLTDAGG
PFPTFVKHAPLPAASVRGLSGELRAARPGHHSVELVRAGGTWNDVVAATFSDGGGRYG
FLNLPQGAFDVRVDGXILLPNVQATPGRVTMLEPITLN"
COMPLEMENT (3751 . 4860)
                                                                                                                                                                                                                                           KLSTHADLHTDDDAIQQRYQTFVAEVLPQAERASQALTEKLLAVPGYVPGPDFALNYR
RFQDAAALFREANVDLGVTHNQQINRHSVITGNQKVQLGGGELTLPQAKQQMDSPDRA
QREAAWRALSASNAAIAPELDAVMLDLIRTRRQLAHNADEANFRDYRWKELDRVDYTP
                                                                                                                                                                                                                                                                                                                                        EOCLOFHASYRDEVYPLLSGLYGDIARQLGLESLRPWDYNRNNLLDPEGRESLRPFAT
GADLEALAQQIYESLDPDLAARFRQMRESGLLDLESRPGKMTHAYCNYFPTTNEPFYL
MNYVGTAEDVRYLFHEVGHAFHGFYSGDRQPLVWNRWSPIEFVEIPSMAMFFLTLDHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="MNFEVLSPSRLSSVAHALNRASLKEEMMSKSRSLSALLLGALLL
SACGSPENGPQPAPQPLPNPTEEAPGTPSGKVRGLWVDAFGPGIKTPEEVSTLVDTAR
                                                                                                                                                                          /translation="MLARACPLRGAGPRSCRPAPSQTCSPGCMERERRWARLPPMTTQ
                                                                                                                                                                                                             SNLEAVEHKLMVPADDAQWASYAPEFAALQEADLTAGDVPAWLERWNSLSARLQGSGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="similar to PID:1653945 percent identity: 49.28; identified by sequence similarity; putative" /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /producT="peptide ABC transporter, permease protein"
/protein_id="AAF12420.1"
/db_xref*"G1:6460715"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          //orde="similar to PID:1001216 PID:1001269 percent identity: 66.97; identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="similar to PID:1001492 PID:1001545 percent identity: 62.93; identified by sequence similarity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transl_table=11
/product="conserved hypothetical protein"
/product=10="AAR12422.1"
/db_xref="G1:6460717"
                                                                    /product-"oligoendopeptidase F, putative"
/protein_id="AAF12423.1"
/db_xref="G1:6460718"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement(4857. .5843)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(3751. .4860)
/gene="DRA0208"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement(4857. .5843)
/gene="DRA0209"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(2005. .3645)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="DRA0209"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="DRA0207"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            putative"
```

gene

gene

CDS

gene

CDS

```
Submitted (06-ARP-1993) Nematode Sequencing Project, Sanger Centre, Submitted (06-ARP-1993) Nematode Sequencing Project, Sanger Centre, Hinxton, Cambridge CB10 1RQ, England and Department of Genetics, Washington University, St. Louis, MO 53110, USA. E-mail: jes@anger.ac.uk or rw@nematode.wustl.edu
Coding sequences below are pr. dicted from computer analysis, using predictions from Genefinder .P. Green, U. Washington), and other available information.

Current sequence finishing criteria for the C. elegans genome sequence finishing criteria for the C. elegans genome sequencing consortium are that all bases are either sequenced unambiguously on both strands, or on a single strand with both a dye primer and dye terminator reaction, from distinct subclones. Exceptions are indicated by an explicit note.

IMPORTANT This sequence is not the entire insert of clone KOIF9. It may be shorter because we only sequence overlapping sections once, or longer because we arrange for a small overlap between neighbouring submissions.

The start of this sequence (1. 200) overlaps with the end of sequence of 000025.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The end of this sequence (19655. .19834) overlaps with the start of sequence 211115. For a graphical representation of this sequence and its analysis see:- http://wormbase.sanger.ac.uk/perl/ace/elegans/seq/sequence? name=K01F9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone=*K01F9=*
/clone=*K01F9=*
/oin(complement(21115.1:1418. .1374),
complement(21115.1:188. .1374),
complement(21115.1:660. .746),
complement(21115.1:486. .610),
complement(21115.1:486. .610),
complement(21115.1:238. .427), complement(19292. .19791),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="zK637.1"

join(complement(211115.1:1418..1509),
complement(211115.1:188..1374),
complement(211115.1:187..870),
complement(211115.1:186..746),
complement(211115.1:186..486..610),
complement(211115.1:288..427),
complement(211115.1:288..427),
complement(211115.1:288..427),
complement(19027..19177),
complement(19027..19177),
                                                                     25-OCT-2000
                                                                                                                                                                                                                                                                                                                                          Genome sequence of the nematode C. elegans: a platform for investigating biology. The C. elegans Sequencing Consortium Science 282 (5396), 2012-2018 (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         contains similarity to Pfam domain: PF00083 (Sugar other) transporter), Score=321.5, E-value=3.1e-93,
                                             CEK01F9 19834 bp DNA INV 25-OC
Caenorhabditis elegans cosmid K01F9, complete sequence.
222175
                                                                                                                                                                                                                                                                                                                                                                                                                                                The C.elegans Sequencing Consortium.
Erratum:[[published errata appear in Science 1999 Jan
1;283(5398):35 and 1999 Mar 26;283(5410):2103 and 1999
3;285(5433):1493]]
                                                                                                                                                                                         Caenorhabditis elegans.
Caenorhabditis elegans
Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida;
Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Caenorhabditis elegans"
/db_xref="taxon:6239"
/chromosome="III"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="predicted using Genefinder
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                     (bases 1 to 19834)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 19834)
                                                                                                                                                 Z22175.1 GI:297971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .19834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craxton, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                99069613
                                                                                              DEFINITION
                                                                                                                      ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                CEK01F9/c
                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE
REMARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                     RESULT
                                                                                                                                                                                                    SOURCE
                                                                           LOCUS
                                     /trandialation-"MGGGLHPRQLGHLDRLSDELMFGFWLNPREVAAFLKGAGLNAAG
LTGMGWGTPHPALGDPAAFAALLSDNEQARLGDLGVRLVVAHHLTCLTLGAPLLDPND
TERVWQR1EATRPPLFVDEVMAGREDEGA"
                                                                                                                                                                                                                                                                                                                                                                                <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          771110 TGACGGTGGACCGCGTGCTGGACGACCTGGGCCTGGGCCGCTTCCAGTGGAAGCTGCTCG 771169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    77229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        77350 GGGTGGGCCGGCGCGCGTGTTTCTGACGACGGTGGCGCTCGGCGTGTCTTCGGGCTGG 77409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             77410 CGGGGGCCCTAGCGCCGACGCTGACGTGGCTACTCGTCGCCCGCTTTCTAACGGGCTTCG 77469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              77470 CCATCGGTGGGACGCTACCGGTGGACTACTCGATGATGGCCGAGTTCGTGCCGACAGCGT 77529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     77650 TGGGCCTGGCCGCGCTGCCGGGGTGGTCGCCTGATTGCCCGCATCGGCATTCCCGATT 77709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          77830 GGGGGGGGGCCGGCCCAGCTTTTCCGGGGCGTCCTCGCCCGGCGCACGCCGCTGCTGA 77889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      966 gigcaaggiaigatgigcigicagggaaccaggaaaaggcaaicgccaccitaaagagga 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1026 tagcaactgaaaacggagctcccatgccgctggggaaactcatcatctccagacaggaag 1085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1086 accgaggcaaaatgagggaccttttcacaccccattttagatggacaactttgctgctgt 1145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            681 ttagtgcatttgcgcccgtgtatagctggatcctggtgctccggggcctggtgggcttcg 740
                                                                                                                                                                                                                                                                                                                                                                                                                                   teatggtggaagatgeagtggaageeattggetttggaaaattteagtggaagetgtetg 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 447 ttctcactggcttggcttggatggctgatgccatggagatgatgatcctcagcatcctgg 506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              621 agtacggcaggaaaacagggctgaagatcagcgtgctgtggactctgtactatggcatcc 680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  858 tegtectggetgtgttcgtga-----tgeccagectgggetggegttggetge 905
                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                       /note="similar to GB:U00096 PID:1788770 PID:1799860 PID:1799864 percent identity: 54.32; identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      77170 CCATCTGTGGGCTGACCTGGGCCGCCGATGGAGGTGCTCCTGATGGCTTCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       caccacagctgcattgcgagtggaggctcccaagctggcag-----gtggcattgctga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              77530 GGCGCGGCCGGTTTCTGGTGTATCTGGAAAGTTTCTGGGCGGTGGGCACGGTGGTCGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tcatcctctcagctgtcccgctcctcctttgccgtgctgtgtttctggctgcctgaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cctcggtggtctttgtaggcatgatgtccagctccacgctctggggaaatatctcagacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                741 ggatcggaggagttccccagtcgg---tgacgctgtatgccgagttccttcccatgaaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 798 ccagagctaaatgtattttgctgattgaggtattctgggccatcgggacagtgttcgagg
                                                                                                                                                                                                                                                                                                                                                                                21;
                                                                                                                                                                                                                                                                                                                          Length 198677;
                                                                                                                                                                                                                                                                                                                             Score 89; DB 1; Length 198
Pred. No. 2.5e-12;
0; Mismatches 410; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /protein_id="AAF12499.1"
/db_xref="G1:6460794"
                                                                                                                /gene="DRA0216"
                                                                                                                                                                                                 /gene="DRA0216"
                                                                                                                                                                                                                                                                                                                                3.5%;
                                                                                                                                                                                                                                                                                                                                                                                   Matches 386; Conservative
                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     906
                                                                                                                                                                                                                                                                                                                                                                                                                                   387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       507
                                                                                                                                   gene
                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οý
```

,(19791),

```
LODLK VILLTADGRIEGOESGDLFAFSQRPVQVRNFWFPLRLPPGESTLLLRVQSTST
VYLPIYFSTYAASAASOETLMGFNOAFFGVLFGLFCYNLFLEVSLREATTAMYLLYN
VILDLKSAASAASOETLMGFNOAFFGVLFGLFCYNLFLEVSLREATTAMYLLYN
SIGLFSASCPGLLFKLLPGHVALESAGTYLLMYLSCLUS 1QFSRGYLYTRRDFPRLDR
FLRGLLLAGYHWWRQGLRYGLYT
LAWGALLLSFLYTTAASLGFELFGSSVVK IGMYPELYT LSIGLADR IN NALKEEGF
SRRQAABQARVENEAKSRFLAMSHET INFDLMGVLAMLQLLRPTDLDGQAAYVET 1A
SGGSALMSY INDILLDSFAMSHET STPLMGVLAMLQLLRPTDLBGGAAYVET 1A
SGGSALMSY INDILLDSFARR REGKLHLER IDFDLEELLSDTLAFFSAQAVERRLHUG
LDRGVPRRLNGDPTRLRQVLMNLLSNALKFTAEGHVAVRQRRFDEGGRERLLYSVSD
SGIG ISAQAQKTLFESFSQADSSTTRRYGGSGLGAL SRELLVOMGGRIEVSFSVSG
PRENDALSPALDAGEADELAQULQHRPALLASEDNLTLDCLQALLERGGLRGUPP
OPRRLNAYLEDFSAALDAGEADELAQULQHRPALLASEDNLTLDCLQALLERGGLRGUPP
OPRRLNAYLEDFSAALDAGEADELAQULQHRPALLASEDNLTLLDCLQALLERGGLRGUPP
OPRRLNAYLEDFSAALDAGGORILLLASEDNLTLLCOLQALLERGGLRGUPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PHEGLRLALALAQPVAVKALREALLELYRERRRQPGRSSEAAPDERPDAPCILVAEDN
PVNQLVVRGFLAKRGYAVRLAGNGRLALDEYLRDPNGIQLILMDGEMPEMDGFEATRL
IRREERAQGWPRVPIVALTAHILDEHRRAGIEAGMDAYLGKPVDRAELYATLERLLGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /trānslation="MSRLCLVLLLLCCALPARAQPPAPLDGEDLRLSLGAYAEYYRDA
GGKARLGDILALPAQAFAALRGDHANFGKNAAAWWFRVRLDNRNGADLAGFLEVNYPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MLIPHDLLEADTINNLLEDFVTREGTDNGDETPLDVRVERARHA
LRRGEAVILFDPESQOCQLMLRSEVPAELLRD"
complement(3959. .5284)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AALRVNPEIRLALLOPLPGQDOPORPHLKPOEVLVFONLSPWTAWRFIRLEPGERVA
PLAVLATAAGEPDYGHDINLESDNPGEAGORYGGTOPFGDRFEFSSQAPFHWGFYH
BAAVISGAPFLARAWFEWRAYQYFGLSRFAFANGHPYWGYFRLGWGMHYIDDY
HSTPLPGASLAAMLOMGGKALLGYPEEKQAAIERVANRHTAVEKYQFDWLROLLRDGF
PQPMLDAYADTRRDGAYPAYSPTYLRDVVAAESNAHAAAFDAAIGEWLAARPASAAQD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="MLQSVSPKHDLPLKPEGQAAKPERTGTWAPFSIQAFRIIWICNL
     Direct Submission
Submitted (16-MAY-2000) Department of Medicine and Genetics,
University of Washington Genome Center, University Of Washington,
Box 352145, Seattle, WA 98195, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                          sensor/response regulator hybrid"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FSESNQPRPEAHDNAVLNAQLIELIGHFGAHSRNIARAALETEEGGAKE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="conserved hypothetical protein"
/protein_id="AAG06851.1"
/db_xref="GI:9949606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="conserved hypothetical protein"
/protein_id="AAG06853.1"
/db_xref="GI:9949608"
                                                                                                                                                                           /organism="Pseudomonas aeruginosa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="hypothetical protein"
/protein_id="AAG06852.1"
/db_xref="GI:9949607"
                                                                                                                                                                                                                                                                                                                                                                                                                                                       /protein_id="AAG06850.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(3959. .5284)
/gene="PA3464"
                                                                                                                                                                                                                /db_xref="taxon:287"
100. :2859
/gene="PA3462"
100. :2859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="GI:9949605"
                                                                                                                                                                                                                                                                                                                                                                                                                                /product="probable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                   /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ∠911. .3141
/g∈ne≈"PA3463"
2911. .31/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2911. .3141
/gene="PA3463"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5501. .7216
/gene="PA3465"
                                                                                                                                                                                                                                                                                                                                     /gene="PA3462"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="PA3464"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5501. .7216
/gene="PA3465"
                                                                                                                                                                                                    /strain="PAO1"
                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
                                                                                                                                              1. .10344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PSRQA"
                                                                                                                                                 source
           TITLE
JOURNAL
                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                           /translation="MCDKAILTEVLEASNLTEAYVDLTAKQL1KEIRHVGDDFAVRYS
NLDDRTELGEPTDQRSPDSEKTFTVDEAVEALGFGRFQLKLS1LTGMAWMADAMEMML
                                                                                                                                                                                                                                                                                                                                     GAVFEALLAYFWESFGWRALMFLSSLPLGİFAVASFWLPESARFDMASGHPERALET
LOAAARWIRVOLPTGRLVSSTRAGSESRGDIANLLSPDLRKTTILMGIWATTAFSYY
GWVLFTTVLFOSHDECHGGIFSNGTQMBVCQPLTRSDYFDLLSTTLAEFPGLIITVLI
IEWFGRKTWALEYAVFAIFTFLLYFCLDRFTVYVILFVARKISGAFOCAYYTPEV
YPTTLRAVGLGTCSAMARIGAIVASEKSLSLPIGIYGTAAILGLIASLSLPIETKGRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Stover, C.K., Pham, X.Q., Erwin, A.L., Mizoguchi, S.D., Warrener, P., Hickey, M.J., Brinkman, F.S., Hufnagle, W.O., Kowalik, D.J., Lagrou, M., Garber, R.L., Goltry, L., Tolentino, E., Westbrock-Wadman, S., Yuan, Y., Brody, L.L., Coulter, S.N., Folger, K.R., Kas, A., Larbig, K., Lim, R., Smith, K., Spencer, D., Wong, G.K., Wu, Z. and Paulsen, I.T.
Complete genome sequence of Pseudomonas aeruginosa PA01, an
                                                                                                                                                                                                                                                                                 LSLISPALACEWGISSVQQALVTTCVFSGMMLSSTFWGKICDRFGRRKGLTFSTLVAC
IMGVISGMSPHFYVLLFFRGLTGFGGIGGVPQSVTLYAEFLPTAQRAKCVVLIESFWAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Stover, C.K., Pham, X.-O.T., Erwin, A.L., Mizoguchi, S.D., Warrener, P., Hickey, M.J., Brinkman, F.S.L., Hufnagle, W.O., Kowalik, D.J., Lagrou, M., Garber, R.L., Goltry, L., Tolentino, E., Westbrook-Wadman, S., Yuan, Y., Brody, L.L., Coulter, S.N., Folger, K.R., Kas, A., Larbig, K., Lim, R.M., Smith, K.A., Spencer, D.H., Wong, G.K.-S., Wu.2., Paulsen, I.T., Reizer, J., Saier, M.H., Hancock, R.E.W., Lory, S. and Olson, M.V.
           symporter transmembrane region),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19221 ATATITICCATIGGAATITITATAAICTATITGGAGTITGCAGTITCACTGTCACTGTG 19162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cctgaggtctaccccacggcaacgcgggcctcggccttgggcacctgcagcggcatggca 1588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1409 atcttctccttctgcagcctcctgctgtttatctgtgttggaagaaatgtgctcactctg 1468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of the complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteria; Proteobacteria; gamma subdivision; Pseudomonadaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 19834;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 84; DB 3; Length 198
Pred. No. 5.8e-11;
0; Mismatches 85; Indels
                                                         this gene
this gene"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AE004767 10344 bp DNA BCT Pseudomonas aeruginosa PA01, section 328 of 529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PF00939 (Sodium:sulfate sympor'Score=1.3, E-value=3.2, N=1
CDNA EST yk311g8.3 comes from
CDNA EST yk311g8.5 comes from
                                                                                                                                        /protein_id="CAA80131.1"
/db_xref="G1:3878108"
/db_xref="SWISS-PROT:P30638"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6053 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                opportunistic pathogen
Nature 406 (6799), 959-964 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MMVRLTSEKSSIFSNFFQDSH
3410 c 3638 g
                                                                                                                    /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:9949604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 10344)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 10344)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3est_Local Similarity 61.4
Aatches 135; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         genome.
AE004767 AE004091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pseudomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AE004767.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20437337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 11
AE004767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
```

qq

δ g ò Dp ò

ò

qq

```
RESULT 12
AC067757/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                     844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                        Ω
                                     q
                                                                                        ò
                                                                                                                                     Dp
                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="probable MFS transporter"
/prodict="probable MFS transporter"
/protein_id="AAG06855.1"
/db_xref="G1:9949610"
/translation="MPDAPASAAERLERLPLSPYHRLVFVIIALAFFFDSMDLAMMTF
LLGSIKAEFGLDSAAGGLLASSSFFGWVIGAALSGMLAADFFGRKPVFQASIVLWGLAS
YLCSTAGDLDSLTFYRVLLGIGMGMEFPIAQSLLSEMIPASRRGKYIALMDGFWPLGF
                 LWGLSFEMTGAMFATLLAFLGYLDPVLLITŠTLWISLGGSVTIPAWQAAVNEOVPARM
VSDAVLLNSVNYNVARAAGPALGGILLSAVGPAWVILFNSFYYMALIWAIWOWRRDVP
KRSLPPEGILEGVTAALRFTQYSTVTRLVWMRSFAFGLSASAVWALLPLLAHRNDGD
APYYGYMLGAGLGGATLGSTQVSRLRGYRIGSSRLISLAGFTLALILLTGLYUNWUL
FPVILLGGGCWIGALATYNSAVQILVPDWIKARALAIYQTALYGGSLAGSFLWGHLAE
TWIVHGALLAAGGLLLASVILLYNSRLDFMBMAASISRAPASWPGQPSFVFNTRRGWVL
                                                                                                                                                                                                                                                                                                                                /codon_start=1
/transl_table=11
/product="probable ATP-dependent RNA helicase"
/protein_id="AAG06854.1"
/db_xref="G1:9949609"
/translation="MPRSPLFSQFPLHERLLKALESLSFSEPTPVQAAA1PKALEGHD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LRVTAQTGSGKTAAFLLPLLHRLLAEDKPRSLARALILLPTRELAQOTLKEVERFAQF
TFIKACLITGGEDFKVQGARLRKNPEIIIGTPGRLLEORNAGNLPLQDIEVLVLDEAD
RMLDMGFADDVLALANACPAERQTLLFSATHSGAGLNKVIAEVLREPQVLRLNQVGEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NENVRQOVITADDVAHKEQLLQMLLSNETYTKAIVFTNTRVSADRLTGRLJANQHKVF
VHGEKDQWOKKLAIERLKQGAVKILVATDVARARGLDVVGGLDVINFDMRSGDEYVH
RIGRTGRAGARGLAIERLSLICHGMNLMSSVERYLKQNFERRNIKELKAYQGPKKLKAS
GKAAGSKKKRODRKGAAAKPAAKRPAARPKAGPSAVVSALGMAPLKRKFDTAE"
                                                                                                                                                              VSIEYRIPAERTRDFVRAAQPLRRLRLRNGAERWSLFRDVSNPEVWOELFLVDNWIQH
LRMLDRWTLADKIVIDNVTALHAGDGPPQIRHCVSYEASSYDTPLVKSATPPANDEAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VAAGCLSYFLLPLTGWRSIFLVLALPAVFVLAIRFLIPESPRWLEOAGRREOADRYLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DIEARVMRSLGLTELPPPLRQPQRERSRPGFFSAFAELWSPAYRRRTLTVWGLWFFAL
LGFYGLTSWLSALLQQSGFAVTQSVYYTVLISLAGIPGFLCAAWLVESWGRKPSCVLM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LLGGGAMAYAYGQTAVFGGSLALLIGFGLAMQFFLFGMWAVLYTYTPELYPTSARATG
SGFASAVGRIGSLLGPLVTGLVLPLTGQGGVFTLGALCFGVALVVWAFGIETRGRTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
?ANLGTWAQSVAAAWVVTDAHASPLMVAMIQVAAALPLVLLS1LSGV1ADNHDRRKIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8920 ATATCACCGACTGGTCTTCGTGATCATCGCGCTGGCGTTCTTCTTCGACTCGATGGACCT 8979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9100 CATGCTCGCCGACCGCTTCGGGCGCAAGCCGGTATTCCAGGCCAGCATCGTGCTCTGGGG 9159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9160 CCTGGCCAGCTACCTGTGCTCCACCGCCGACCTCGACAGCCTGACCTTCTACCGGGT 9219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8980 GCCGATGATGACCTTCCTGCTCGGCTCGATCAAAGCCGAGTTCGGGCTCGACTCGGCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         547 ggtggcattgctgacctcggtggtctttgtaggcatgatgtccagctccacgctr.gggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              487 gatgatecteageatectggeaceaeagetgeattgegagtggaggeteceaagetggea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         aaatatctcagaccagtacggcaggaaaacagggctgaagatcagcgtgctgtggactct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gtactatggcatccttagtgcatttgcgcccgtgtatagctggatcctggtgctccggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.2%; Score 82.8; DB 1; Length 10344; 47.6%; Pred. No. 1.3e-10; tive 0; Mismatches 302; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1756
                                                                                                                                                                                                                                                         /gene="PA3466"
complement(7338. .8678)
                                                                                                                                                                                                                                  complement(7338. .8678)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3395 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8864. .10231
/gene="PA3467"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8864. .10231
/gene="PA3467"
                                                                                                                                                                                                                                                                                                      /gene="PA3466"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3698 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 47.6
Matches 277; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QQ
```

ò

```
AL Dipublished

Stren, B., Linton, L., Nusbaum, C., Lander, E., Abraham, H., Allen, N., Andarson, S., Baldwin, J., Barna, N., Bastlen, V., Bada, F., Barna, N., Bastlen, V., Bada, F., Bardwin, J., Barna, N., Barkett, G., Cooke, P., Dehrellano, K., Diaz, J.S., Campopiano, A., Castle, A., Choepel, Y., Colangelo, M., Collins, S., Colymore, A., Cooke, P., DeArellano, K., Dewar K., Diaz, J.S., Dodge, S., Domino, M., Poyle, M., Ferreira, P., FitzHugh, W., Gage, D., Grand-Pierre, N., Grand, C., Hagos, B., Hadford, A., Horton, L., Howland, J.C., Iliev, I., Johnson, R., Jones, C., Kann, L., Lehoczky, J., Kein, J., LaRocque, K., Landers, T., Lehoczky, J., Levine, R., Lieu, C., Liu, G., Locke, K., Macdonald, P., Marquis, N., McCarthy, M., McEwan, P., McGurk, K., Mardonald, P., Marquis, N., McCarthy, M., McEwan, P., McGurk, C., Milu, G., Locke, K., Macdonald, P., Marquis, N., McTarli, D., Ollvar, J., McGurk, Y., McCarnan, R., Debecters, R., Lieu, C., Liu, G., Locke, K., Macdonald, P., Marquis, N., Morrow, J., McCarnan, R., McCarnan, R., Marquis, N., Patalan, C., Pollara, V., Raymond, C., Riley, R., Spencer, B., Stange-Thomann, N., Stojanovic, N., Subramanian, A., Tradanas, J., Tesfaye, S., Theodore, J., Tirrell, A., Travers, M., Trigillo, J., Young, G., Zainoun, J., Zimmer, A. and Zody, M.

Nessiliev, H., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D., Young, G., Zainoun, J., Zimmer, A. and Zody, M.

All repeats were identified using Repeatwasker:

All repeats were identified using Repeatwasker:

All repeats were identified using Repeatwasker:

All repeats were identified using Repeatwasker html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACO67757 62204 bp DNA HTG 27-APR-2000
Homo sapiens chromosome 2 clone RP11-423G3 map 2, LOW-PASS SEQUENCE
SAMPLING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                            9339
                                                                                                                                                                                                                                                                                                                                                                                9340 CTTCGTCGCTGCCGGCTGCCTGTCCTACTTCCTGCCGCTGACCGGCTGGCGCAGCAT 9399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9400 TTTCCTGGTGCTGCCGGCGGTGTTCGTCCTGCCATCCGCGTTCTTGATTCCCGA 9459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                            963
727 cctggtgggcttcgggatcgg---aggagttccccagtcggtgacgctgtatgccgagtt 783
                                                                                                                                                9220 ATTGCTGGGGATCGGCATGGGGATGGAGTTTCCCATCGCCCAGTCGCTGCTGTCGGAGAT
                                                                                                                                                                                                                                                                                                        geteatecteteagetgteeegeteetectetttgeegtgetgttttetggetgeetga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Smit, A.F.A. & Green, P. (1996-1997)
http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: sequence_submissions@genome.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Birren, B., Linton, L., Nusbaum, C. and Lander, E. Homo sapiens chromosome 2, clone RP11-423G3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                964 aagtgcaaggtatgatgtgttcagggaaccaggaaaaggc 1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Center project name: L9993
Center clone name: 423_G_3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC067757.1 GI:7651806
HTG; HTGS_PHASE0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 62204)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC067757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 human.
```

																· · ·														
s for ows at																														
in ead ely ul all ced ced thi	۲ ,		_	c	£	-C	_	_	ے	æ	z.	æ	ч	ч	4	ч	ď	ъ.	모	ч	ч	ч	ų	ч	ч	ч	4	4	4	
് മാവാവാ മ	length	length	length	ength	length	ength	length	length	ength	ength	length	length	length	length	length	length	length	length	length	length	length	length	length	length	ength	ength	length	length	length	
assemblerate the is comploud is use is use in the is use to be detected to be detected in the event on number	in le		in 16	in 16	in 16	in 1	in l	in l	in l	in l	in l	in l	in 1	in 1	in 1	in 1	in 1	in 1	in l	in 1	in 1	in 1	in 1	in l	in 1	in l	in 1	in 1	in 1	
t been asser o separate ppear is cor sampling is e generich lones to be umed that tl on. In the cession numl	dq	یم م	Ω	Ωı	ď	d d	da d	dd d	dq	dq .	dd i	dq	र्ष वृ	da s	3 pb	дф.	ರ್ ಧ	dq .	dq 969	44	2 p	4 d	dd 8	ор 2 bр	g g	da e	dq .	da i	pb 3 pb	¥,
not been to separate appear is appear is be generated by the sampling the sampling of clones the samed the stion. In accession	730 0 bp	100 pp f 700 l	00 pp		986	980		25	27.5	2 7 5	200	703	7100	69	100	700	2007			202	717	989	69	71	700	200	21.5	100 697	100 688	
used the they a the they a thence the may be assomplet:	of 7	6 T 6	of G	of o	- g -	g of	9 of	0	g of	g of	g of	of	of	of	of	o	of	g of	jo f	g of	g of	g of	g of	g of	g of	g of	g of	g of	of of	
്നെട്ടെയ്ലാ	contig	of contig	of contig	ot contig	or contig of	nti	nti	contig	nti	nti	nti	contig	of contig	or contig	of	of contig	ot contig	of	contig	contig	contig	contig	contig	or contig	or contig	or contig	of contig	ţį	of contiq	1
eads that he s of N are or in which town clones that that thouse had should not should not supdated, is updated,	0				-			_		<u>а</u>		٠. تون	ap c	ap .	ap o	3. gap o	ap co	ap c	ap CCC	5721: CC	g u	g :: (3120: CC	932: CC	: gap (735: cc	544: CC	gap (gap c	gap (, ,
reads th ns of N ler in wh Low-pass clones ationshi should uenced to	730: gap	. gap 2322:	: gap 3119:	: gap 3925:	: gap 4710:	. 9ar 5499: . 693	: 9ap 6293: : gan	. 9ap 7102:	92	372		. 9ap 0317:	7: 9 1127	/: g 1922	2: gap (2715: c	5: 9 3518	8: gap 4318: c	8: gap 5123: c	3: gap 5919: c	6721 6721	17533: C	8322		200	7 O I	5: g 1544	8	∺	3: 3941	,
		622	422	on i	4025	0 0 0 0	9999		707/	8020	8822		1041				1361		1522	16019	1763	1040	1042	1922	9 6	083	_	C)	2325 2	
		523 523 623	23 2	20 3		112		400			233	12																		
NOTE: Tr sequenci contips. arbitrar identify overlap However, will be) L	15 16	23	32	2.44	4 4 6	200	96	72	80	200	96	100		115	12. 12ε	136	144	157	16(166	176	186	199	202	202	216	22	23.	1 6
NOTE seque cont and arbi iden iden over Hower the	o.																													

24742 24841; gap of 100 bp 100 bp 25542 25541; gap of 100 bp 27170 2765; gap of 100 bp 10 length 27072 21131; gap of 100 bp 10 length 27073 2113; gap of 100 bp 10 length 27073 211; gap of 100 bp 10 length 27073 211; gap of 100 bp
g

qq ŏ

```
/product="AGR_C_4105p"
/product="AGR_C_4105p"
/product="AGR_C_4105p"
/product="AGR_C_4105p"
/product="AGR_C_4105p"
/db_xref="Gr_115157412"
/translation="WILTARELPMIVIAILAVALALISFIGLWRGVRGAWLRGLALV
/translation="WILTARELPMIVIAILAVALALISFIGLWRGVRGAWLRGLALV
ALLAAIANPLLTQEREPLSTIVPVIVDRSQSQDVQDRPQMTDTALETLKDRLSRFPR
IEPRIVYBRONGESDSPSTQLESALSSAVSDVSPRXGGAIFLEGGTHDFNALPNA
EQALGFRAVHGLITGKADEEDRRIEIVRAPREGIVNEGOGITLRVFDGDGRAAGGGSA
EQTVKMNGEEIATLQATPGQPTPFSFKVPRGGNNVMEFSVAELPGEVOATPINELSLI
EGIRONLRVLLVSGEPHAGERARNLKLSBASVDLVHFTILRPERKOOFTPINELSLI
AFFRELFVERINDFOLIIFDRYQHRGVLPILYYDYIAQYVRRGGALLIAAGFBHAGQ
DSIAMTPLASVLPAQPTGQVHQAARTPRLSEAGKKHPVTRGLEGSGNEPPOWGRWFT
ISVDPPQGGTVWLGGGGODPLLVLNRGGEGRYMALLSGOGWLARRGEGGGGFHAALRR
IAHWLMKEPELEEEALTARANGRTLQITRQTIGDDFGQASVRFPSGGTENMAFTTFP
GLYRIERRWDFTGLFEIX KNODFFTLVHYGAVDAPEFRAMISTTETP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /ULTAINSTATE OIL 101515/1411
//ULTAINSTATE OIL 101515/1411
//ULTAINSTATE OIL 101515/1411
//ULTAINSTATE OIL 101515/1411
//ULTAINSTATE OIL OIL INTAINITAIN TRANDIRNISTAGGGDLULVUNIS
WASADDWERRVATAOALIGDAERADRPUS I SETADAEHDANSGTTAVALDKLAAAR PK
PUVDRARFARAITERLINGTARGTARGYTANDGOSGTATANTLASLESPAEFRIVEGD
GKAVAAITDATUNADAMSVILSRLDTROAASLTVNAODSGGRILANGTASFRAGAET
TATVEAPERELNDFARLSTELDROAASLTVNAODSGGRILAGFGTONDFOPLLOPI
YYISRALQPPVDLIPORGADLAQAIPELLOSNESYIVNADIGGRIQETYVPLOPINGG
GGTLIRFAGFRLAAPADDPLVPVTLROGERALGGASWAEPOPLAOFPAFRAMP
KADGILIKROVLABPTPDLAERTWASLADGTPLVYTRNVEAGRIVLFHVSAEASWSDL
PISGHPVDMLIRRIVOLSKARGASASANAPALPPFRILLTAGGARAAETIGETAKS
LIRPALFIAAFWALLADSIIVLANGAFALPPFRILLTAGGAFAAMSPTDARS
AGQPPRTGFONPPGLYGTEGGFVALNLIPAGATLRPLDTSAGGVSTTREALIGETAKS
LIRPALFIAASVHULADSIIVLEMNGAFARLPRARSATVATLLLALGAFAAMSPTDARA
DDPKRODDOIFERLDTHAAVRTGEDDVORTSEGGLGGESETINKTTLEPGGPVGL
DISKDELSFYPIIVRPVSATARPPSSAAISRIDAYMRAGGTVLEDTROOFSSLDIGAT
SANGERLAAINDIPPLERVPEDHVUTRSFYLLTNFPGRYNGSPLAVESRGAAKT
TSGLSSSGGGVTPIMITGODFGAAWAVDAQGAPVLPTVPPDEMORRHAFRSGVNIMMY
MLTGNYKADOYHVPALLERIGG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="MKPKSGAVRRLEKNTMNFVLSDVADAEAEKAIRDPLVAYNLARF
GESDKRDLNITIRNDDNSVTGGLVGHTARGWLYVQLLFVPEAMRGGGIAPKLLAMAEE
EARKRCCMGAIIDTMNPDALRTYERYGFTKIGSLGPLSSGGSITWLEKRF"
complement (7485. .8798)
/gene="AGR.C_410"
complement (7485. .8798)
           /translation="movasicolvuktpgsevlararoraalvpdcmveakrlantvt
agmigrrkrgigempofreyaegeslsridmksarddhyvvdrrparahtyvuma
Medemmyrstigsygkesralvullalatilarsgerigcpgimepvsarnaaerla
aainhaplysgmpotsairgasdivligdflodaknvmerisplarrglkghyveiad
paeetppysgrtefsdppetgeklysgraetiredytraylarkalsssirrlgwnfv
                                                                                                                                                                                                  FHRTDHLASEALVAVHMYLSGAPAQGGGHR*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4888. .6972
/gene="AGR_C_4105"
4888. .6972
/gene="AGR_C_4105"
/note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                      /note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7017. 7475
/gene="AGR_C_4106"
7017. 7475
/gene="AGR_C_4106"
/note="(L25828) ORF 12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="AGR_C_4106p"
/protein_id="AAK87999.1"
/db_xref="GI:15157413"
                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
/product="AGR_C_4102p"
/protein_id="AAK87997.1"
/db_xref="G1:15157411"
                                                                                                                                                                                                                                    2076. .4886
/gene="AGR_C_4102"
2076. .4886
/gene="AGR_C_4102"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LAFSALWWREGR"
7017. .7475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/transl_table=11
/product="AGR_C_4098"
/product="AGR_C_4098"
/protein_id="AAR87995.1"
/db_xref="G1:15157409"
/db_xref="G1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PFHYLATORPLEOEGTYPLPEAQLDRFLLQVDVDYPELAAERO ILLDTGTASEBARP
VIGAERLMETQALIROMPVSDKVVDA ILSLVRSARPGHGNKLTDKNVVWGPGPRAGOS
LMLTARARALYEGRLAPSLDDVHALAEPVLEHRMALTFAARAEGMSVRDVIAALVEQA
                                                                                                                                                                                                                                                   ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Agrobacterium tumefaciens strain C58 circular chromosome, section 199 of 254 of the complete sequence.
AE008141 AF017366
                                                                                                                                                                                                                                                                                                                                                            Agrobacterium tumefaciens.
Agrobacterium tumefaciens
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;
Rhizobiaceae; Rhizobium.
                                                                                                                                                                                                                                                                                                                   aactttgctgctgtggtttatatggttttccaatgcattctcttactacgggttagttct 1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 11286)
Hinkle,G., Slater,S.C. and Goodner,B.
Hinkle,G., Slater,S.C. and Goodner,B.
Complete Genome Sequence of Agrobacterium tumefaciens C58
(Rhizobium radiobacter C58), the Causative Agent of Crown Gall
Disease in Plants
Unpublished
2 (bases 1 to 11286)
Hinkle,G., Slater,S.C. and Goodner,B.
Direct Submission
Submitted (14-ANG-2001) Cereon Genomics, 45 Sidney Street,
Cambridge, MA 02139, USA
Location/Qualifiers
                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                62204;
                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                Length
53523 54213: contig of 691 bp in length
54214 54313: gap of 100 bp
54314 55000: contig of 687 bp in length
55001 55100: gap of 100 bp

    ..11286
    /organism="Agrobacterium tumefaciens"
/strain="C58"
    /db_xref="taxon:358"
    ..1128

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       48557 ACTCACCACAGAACTCTTCCAGGAGATGTCTGGGGCA 48517
                                                                                                                                                                 81.8; DB 2; ...
No. 2e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1192 actcaccacagaactcttccaggcaggagatgtctgcggca 1232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="AGR_C_4100"
1159. 2079
/gene="AGR_C_4100"
/note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        118. .1128
/gene="AGR_C_4098"
/note="(AP001509) BH0731
unknown conserved protein"
                                                                                                                                                                                                                                                       0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
/product="AGR_C_4100p"
/protein_id="AAK87996.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       118. .1128
/gene="AGR_C_4098"
118. .1128
                                                                                                                                                                                   Score Pred. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AE008141.1 GI:15157408
                                                                                                                                                                                   3.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .2079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .11286
                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AE008141 AE007869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1159.
                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                   Query Match
Best Local Simi
Matches 89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 13
AE008141/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                              1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
```

```
Embryophyta; Tracheophyta;
                                                                                                                                                                                                                                                                                                                   8549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8188 ACCTGCTGCGCACGGGCGATCCGAAGACCAAGCCGTCGTCGTCGTGCTGCTGG 8129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-MAY-1999
Pl clone: MGH6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Arabidopsis thaliana (strain:Columbia) DNA, clone_lib:Mitsui Pl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (28-ARR-1999) to the DDBJ/EMBL/GenBank databases. Yasukazu Nakamura, Kazusa DNA Research Institute, Laboratory of Gene Structure 2; Yana 1532-3, Kisarazu, Chiba 292-0812, Japan (E-mail:ynakamu@kazusa.or.jp, Tel:81-438-52-3934), Fax:81-438-52-3934)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheop
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
Rosidae; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nakamura,K.
Structural Analysis of Arabidopsis thaliana Chromosome 3. II
               ttctcactggcttggcttggatggctgatgccatggagatgatgatcctcagcatcctgg
                                                    8728 GCATATICGGCCTCGTCTGGGCGGGGGGGCCATGCAGGTTCTGGCGGTTCGCGCTTCACAG
                                                                                                                                                                                                                                                                                    8668 CCGCCTCGATTGCCGCGACCTTTGGCCTGACAGTGCCGCAGGCGCTGCAGACGGAACGG
                                                                                                                                                                                                                                               567 tggtctttgtaggcatgatgtccagctccacgctctggggaaatatctcagaccagtacg
                                                                                                                                                                                                                                                                                                                                                                    gcaggaaaacagggctgaagatcagcgtgctgtggactctgtactatggcatccttagtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8488 TATTTTCACCCGATTTCACCATTCTGCTCGTCCTGCGTTTTTCTCACCGGAGCTGCGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               804 ctaaatgtattttgctgattgaggtattctgggccatcgggacagtgttcgaggtcgtcc
                                                                                                                                caccacagetgeattgegagtggaggeteceaagetggeaggtggeattgetgaeetegg
                                                                                                                                                                                                                                                                                                                                                                                                                        GCCGCCGCGGTGCTCACCCTGCGTGCCATGCGCTGTTCGCCTTTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     catttgcgcccgtgtatagctggatcctggtgctccgggggcctggtgggcttcgggatcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tggctgtg-----ttcgtgatgcccagcctg--ggctggcgttggctgctcatcctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8308 CGCCTTGGGGTGCCAGTCTTGCGGGCGTGC ,ATGCCTGGCGCTATATTTTGCGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 975 atgatgtgctgtcagggaaccaggaaaaggcaatcgccaccttaaagaggatagcaactg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gaggagttccccagtcggtg---acgctgtatgccgagttccttcccatgaaagccagag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8368 GCCCTGCTGTTTTCTGGAAGGTTTCTGGCCGGTTGCCACACTGATCGTGCACTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               915 cagetytecegeteeteetttygeeytyetytettygetyeetyaaaytycaaggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8248 CGGCTTTCCCGGCCGTTCTTGGTCTCGGGCTTCGCTTTCTGGTGCCGGAATCGCCGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            genomic DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AB026645.1 GI:4757401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 81020)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AB026645 81020 bp
Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               clone:MGH6.
Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complete sequence.
AB026645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1035 aaaacgg 1041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8128 TGAACGG 8122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nakamura, Y
                                                                                                                             507
                                                                                                                                                                                                                                                                                                                                                                                                                           8548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                 627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AB026645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
            ò
                                                                đ
                                                                                                                          ò
                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          đ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi_ransi
                                                                                                                                                                                                                         ASIAATFCLTVPQAGGGGTAFFFCMLLGAAGTGRILADRYGRRRVLITTVTVACTALFGUL
SIFSPDFTILLVLRFLTGAAVGGTLPVDYAMMAEFLPAKNRGRWLVFLEGFWAVGTLV
AAAAAGAGAAGAAGATLPVDYAMMAEFLPAKNRGRWLVFLEGFWAVGTLV
NRMLVVNGRAPLDAGTGLFQDVTRGGIFSPALRGPSHILATGRSEEARAV
MPAKLAGDGFGFVRGTGLFQPDVTRGGIFSPALRGPSHULATAFFAVSY
LFTLASAGAM AASILIMSFALLGTWGALAATAATGVEKWGRRPTLGFCLLSALGCL
LFTLASAGAM AASILIMSFALLGTWGALAATAATGVEKWGRRPTLGFCLLSALGCL
complement (888 8. 9493)
/gene="AGR_C_4108"
complement (888 8. 9493)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/product=*Abhe=11
/product=*Ack_24108p*
/protein_id=*AaK88001.1*
/protein_id=*MAK88001.1*
/protein_id=*MAK88001.1*
/protein_id=*MSPPHSGSFGLFWSKHDLVYLTEDASHDAIIDLINEBAFGPGKH
/translation=*MSHPHSGSFGLFWSKHDLVYLTEDASHDAIIDLINEBAFGPGKH
TRAAARIREOGPHDRSLSFVCADGETIASVRMTPVLAGAVKGHMLGPLAVRPSHKNH
TRAAARIREOGPHDRSLSFVCADGETIASVRMTPVLAGAVKGHMLGPLAVRPSHKNH
TRAAARIREOGPHDRSLSFVCADGETIASVRMTPVLAGAVKGHMLGPLAVRPSHKNH
PVGDDVHQKLGAARRGSEAVILIGDPPYYMPLGFEKVAYAALDFPGPVDPNRVLVV
                                                                                                                                                                                                       /translation="MTAITMNDALERAGAGAYQRRLMGIFGLVWAADAMQVLAVGFTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="MHFVFLLTRGATLGVRAACFDEKGRIFLVRHTYLPGWYLPGGGV
ERGETLLMALHKEIREEGNLDAASIPELVHVYLNLEGSNRDHVALYRLQVTGTTPKKP
DHEITESGFFELSALPEGLTPATRRRLAELAGEAAIADYW"
1 3769 c 3294 g 1973 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="probable acetyltransferase VC0655 {imported} Vibilo cholerae (group Ol strain N16961)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tcatggtggaagatgcagtggaagccattggctttggaaaatttcagtggaagctgtctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="AGR_C_4109"
/note="HYPOTHETICAL 37.4 KD PROTEIN IN EXUR-TDCC
INTERGENIC REGION (0328)"
            Deinococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1; Length 11286;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
            ı
/note="probable sugar transporter radiodurans (strain R1)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.0%; Score 77; DB 1; Let 48.0%; Pred. No. 4.1e-09; tive 0; Mismatches 335;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="hypothetical protein"
                                                                                                                                          /protein_id="AAK88000.1"
/db_xref="G1:15157414"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
/product="AGR_C_4111p"
/protein_id="AAK88003.1"
/db_xref="GI:15157417"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="AGR_C_4108"
                                                                                                                       /product-"AGR_C_4107p"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="AGR_C_4109"
9586. .10746
                                                                                         /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Simi
Matches 320;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
```

ò g

```
SPTREMBL;
SPTREMBL;
SPTREMBL;
SPTREMBL;
SPTREMBL;
                                                       SPTREMBL;
SPTREMBL;
SPTREMBL;
                                              SPTREMBL;
                                                                                    SPTREMBL;
                                                                                             SPTREMBL;
                                                                                                       SPTREMBL;
                                                                                                                SPTREMBL;
                                                                                                                       SPTREMBL;
                                                                                                                                  SPTREMBL;
                                                                                                                                            SPTREMBL;
                                                                                                                                                    SPTREMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                             clone.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
                                                                                                                                                                                                    The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
 Lin X., Kaul S., Town C.D., Benito M., Creasy T.H., Haas B., Wu D., Maiti R., Ronning C.M., Koo H., Fujii C.Y., Utterback T.R., Barnstead M.E., Bowman C.L., White O., Nierman W.C., Fraser C.M.; "Arabidopsis thaliana chromosome III Pl MGH6 genomic sequence";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (24-FEB-2000) to the EMBL/GenBank/DDBJ databases.
The Institute for Genomic Research, 9712 Medical Center Dr., Rockville, MD
20850, USA
                                                                                                                         ;
0
                                                                                                                                                              67273 TTCACGCTGGATGAAGCTCTTGTGGCGATGGGATTTGGCAAGTTCCAAATTTACGTCCTT 67332
                                                                                                                                                                                           67453 GTCGTTTTTGCTGGCATGCTCATTGGTGCTTACTCTTGGGGCATTGTTTCTGATAAACAT 67512
                                                                                                                                                                                                                                                                                                                                                                                                                                                Arabidopsis thaliana chromosome III P1 MGH6 genomic sequence, complete
                                                                                                                                            386 ttcatggtggaagatgcagtggaagccattggctttggaaaatttcagtggaagctgtct 445
                                                                                                                                                                                446 gttctcactggcttggcttggatggctgatgccatggagatgatgatcctcagcatcctg 505
                                                                                                                                                                                                                     506 gcaccacagctgcattgcgagtggaggctcccaagctggcaggtggcattgctgacctcg 565
                                                                                                                                                                                                                                                         566 gtggtctttgtaggcatgatgtccaggctccaggcactggggaaatatctcagaccagtac 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Arabidopsis thaliana (thale cress)
Eukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                         Gaps
                                                                                                                         0;
                                                                                                      Length 81020;
                                                                                                     Score 74.2; DB 8; Length 8
Pred. No. 2e-08;
0; Mismatches 108; Indels
          /organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                    02-MAR-2000 (Rel. 62, Created)
02-MAR-2000 (Rel. 62, Last updated, Version 1)
                                    /chromosome="3"
/clone="MGH6"
a | 15544 c | 15238 g 25538 t
                                                                                                                                                                                                                                                                                                                                                              standard; DNA; PLN; 81020 BP.
                 /strain="Columbia"
/db_xref="taxon:3702"
                                                                                                     Query Match 2.9%;
Best Local Similarity 56.3%;
Matches 139; Conservative (
  81020
                                                                                                                                                                                                                                                                                                               67513 GGCCGCA 67519
                                                                                                                                                                                                                                                                                              626 ggcagga 632
                                                                 24700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                  AC024128.1
                                                                                                                                                                                                                                                                                                                                                                                AC024128;
                                                                                                                                                                                                                                                                                                                                                              AC024128
                                                                                                                                                                                                                                                                                                                                                                                                                                                            sedneuce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            [1]
1-81020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      [2]
1-81020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lin X.;
   source
                                                                                                                                                                                                                                                                                                                                            15
                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                           RESULT 1
AC024128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HTG.
                                                                                                                                                              q
                                                                                                                                                                                                qq
                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                     òλ
                                                                                                                                                                                                                                                        óγ
                                                                                                                                                                                                                                                                                              ò
```

```
/profein_id="AAF35940.1"
/profein_id="AMHEFRLPTANDTIPGGPTHSNPTPTSLLHAEVWTLCRIFKRTVS
SRKYTPDWRELANGKRYKQQSNYQEAYINFGDNESSSSTNVMNYREGKGNYERSVFQL
QQTPYQHQNQPILMDTTHVDSFQHFSNDNIHHETYETWPDELRSVVEFAFPPSFLS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement(2496. .2802)
/note="ATTIR16T3A|ATTIR16T3A ATTIR16T3A , a non-autonomous
/note="attIR16T3A|ATTIR16T3A ATTIR16T3A , a non-autonomous
/note="attIR16T3A|ATTIR16T3A ATTIR16T3A , a non-autonomous
complement(3046. .3122)
/rpt_family="(GAA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             join[complement(13663. .>13709),complement(13169. .13565),
complement(<12513. .13076))
/gene="MGH6.3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      oin(complement(13663, 13709), complement(13169, 13565),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 prediction programs including GRAIL (available by anonymous ftp from arthur.epm.orn.gov), Genefinder (Phil Green, University of washington), Genscan (Chris Burge, http://gnomic.stanford.edu/-chris/GENSCANW.html), and NetPlantGene (http://www.cbs.dtu.dk/netpgene./cbsnetpgene.html), searches of the complete sequence against a peptide database and the Arabidopsis EST database at TiGR (http://www.tigr.org/tdb/at/at.html).

Camplete sequence against a peptide database and the Arabidopsis EST database at TiGR (http://www.tigr.org/tdb/at/at.html).

Cannotated genes are named to indicate the level of evidence for their annotation. Genes with similarity to other proteins are named after the database hits. Genes without significant peptide similarity but with EST similarity are named as 'unknown' proteins. Genes without protein or EST similarity, that are predicted by more than two gene prediction programs over most of their length are annotated as 'hypothetical' proteins. Genes encoding tRNAs are concluded by transcal' proteins. Genes encoding tRNAs are than two washington.edu/RM/RepeatMasker.html).
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Address all correspondence to:at@tigr.org
Pl clone MGH6 is from Arabidopsis chromosome III and is near the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to T7 end of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /chromosome="III"
/db_xxef="taxon:3702"
/organism="Arabidopsis thaliana"
/cultivar="Columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    join(<426. .518,645. .>1034)
/gene="MGH6.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     orientation of the sequence is from SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      join(426. :518,645. :1034)
/codon_start=1
/db_xref="SPTREMBL:Q9M7W6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(12513. .13076))
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="unknown protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="MGH6.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="MGH6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .81020
                                                                                                                                                                Q9LDZ8.
Q9LE42.
                                                                                                                                        Q9LDY9.
                                                                                                                09LDS0
                          Q9LDF8
                                                        09LDK4
                                                                                   Q9LDM2
                                                                                                                                                                                                                         09LE44
                                                                                                                                                                                                                                                      Q9M7W1
                                                                                                                                                                                                                                                                                    09M7W2
                                                                                                                                                                                                                                                                                                               Q9M7W3
                                                                                                                                                                                                                                                                                                                                       Q9M7W4
                                                                                                                                                                                                                         Q9LE44;
Q9M7W1;
                                                                                09LDM2;
09LDS0;
                                                                                                                                                                   Q9LDZ8;
Q9LE42;
                                                        Q9LDK4;
                                                                                                                                        Q9LDY9;
                                                                                                                                                                                                                                                                                    Q9M7W2;
                                                                                                                                                                                                                                                                                                         Q9M7W3;
                                                                                                                                                                                                                                                                                                                                       09M7W4;
                                                                                                                                                                                                                                                                                                                                                                    Q9M7W5;
Q9LDD1;
                       Q9LDF8;
                                                                                                                                                                                                                                                                                                                                                                                            09M7W6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       molecular marker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
```

```
/protein_id="AAF35945.1"
/translation="MAKNKDDIKYATAQAKLSEDEAIRVSYKHGTPLEGGKIAESFPVE
LFSSAQRIEKGKEQSAASGDQTOIQRDIKDIKGTRTDDSPR"
/gene="MGH6.8"
                                                                                                                                                                                                                                                                                                                             FLEDPVTMLGADELFSOGKLVPLKFSGVTYPEEKPITSVYHTAVKPCRRLEMEISGVV
DPYLESPRAPRTCTVRRRELLGIKRLAYTOGGSASSSSRLSSSSBPRKTASFRHFLINB
SKSTAOQPSHPPPGKDSDILGSSST SISSSRLSSSSGGHELDDLPRLSLDLDNKPG
TPNPFARSRAHHHHHLENNONOPRKPRHTYQVDESTESSIESBRWTYTADSPRLNASGKI
VFHGLERSSSSPGNFTGGPRMKLHHGMPRSHSANVRITPVLNVPVSSLRSGPKSGLFFG
                                                                                                                                                                                                                                                                                       /protein_id="AAF35946.1"
/translation="MASGCVKNVGTSPSHSWTSSKMSLTRESQPLAPALENEDPVDDFE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67453 GTCGTT"TTGCTGGCATGCTCATTGGTGCTTACTCTTGGGGCATTGTTTCTGATAAACAT 67512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ttcatggtggaagatgcagtggaagccattggctttggaaaatttcagtggaagctgtct 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67393 GGACCTGCTCTAATCTCTCTGGAATCTCTCTGCACGCCAGGAAAGCTTAATAACTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gtggtetttgtaggcatgatgtccagctccacgctctggggaaatatctcagaccagtac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gcaccacagetgcattgcgagtggaggctcccaagctggcaggtggcattgctgacctcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 74.2; DB 24; Length 81020; Pred. No. 2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ó;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches 108;
/note="hypothetical protein"
                                                                                                                                                                                                                /db_xref="SPTREMBL:Q9LD39"
                                                                                                                                                                  complement(31715. .32860)
                                                                                                                                                                                                                                       /note="unknown protein"
/gene="MGH6.8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8, 2002, 03:28:23
                                                                                                                                                                                                 /codon_start*1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 139; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     completed: March
ne: 13731 sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGCCGCA 67519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99cay41 632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Search com
Job time:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  67333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67513
                                                                                                                         mRNA
                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
     /protein_id="MART35943.1"
/protein_id="MART35943.1"
/translation="MARGNGMPTLGRVKVCDLVPSEGLPSDSYKLAVTTLSQSLAQYSA
/translation="MARGNGMPTLGRVKVCDLVPSEGLPSDSYKLAVTTLSQSLAQYSA
/translation="MARGSGLDSARIXFHPRDSSEGVETSGYTADPOSWO
BY 10PPASDGALLEKSGLDSARIXFHPROSEDSYRARVILDAIGFYLNLRSGPFTEILD
NVPLRNCEVSSSVLSVCCYARPSFHGAQHHSLTEDEQLILYSDHDHQLDKSLISFVKSD
KAGLHFREMPRGWILVDVDLGPQBAVYPGCLALQATAGYSPAVHFTDLNSLGGSIEG
RFSLARKLMPKSMTNLSCSERRAAGHGYEAQPFVHPRDLSGVSPAVHFTDLNSLGGSIEG
RFSLARKLMPKSMTNLSCSERRAAGHGYEAQPFVHPRDLPNKSHSHNDELFNRGTLQS
FIVPQSQDGSMKQLKKRKSDSRCKPLPPSKRLRLEAQRYLKERVQEIADFKGIKLRFC
NLKECENHNVNNNSPSPANTPFPFAFT
join(complement(24815. >25504), complement(24582. 24731),
complement(243184. 23578))
/gene="MGH6.6"
                                                                                                                                                                                                                                                                .19090,19255. .19381,19476. .19614,19697. .19785,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ALTER SONC TIME AND TO THE TOTAL TO THE TOTAL TO THE TOTAL THE TOT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KRSPEKLEASLGPLOVOHIDLEERIETKGGAPSVEHOFMPTFSGGCSASAWPETARED
LVAGFTNGSCDGDLCVGLRLGDDGAKRRRTQVTNERMRPAE"
complement(26470. .26521)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /procein_de="aaf35942.1"
/procein_de="aaf35942.1"
/translation="masstglityAgallAgDFRLPAVSSLIPKKTSSSLSCLSNKDLSS
/translation="masstglityAgallAgDFRLPAVSEDTDEMFDDLFNKTGKVVFRS
procwatsrgkILTSLSNSKFRAVGKEAEDGFLSNVSEDTDEMFDDLFNKTGKVVFRS
TDWKSPPTAEVDDAAESLAFAVELAKVASDVKAGDIKVLEVKPLVYWFRFTIATHFSFR
QIDAIGSRMRDLAEKKYGKVANGDVKPNSWTLLDFGDVIHLFLPPQRRFYNLEDFYGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="MPQYGSTGQHCEFTAASYFSWPTSSRLSNAAEERANYFSNLQKEE
DDDDEVSPEPVSTEPKGQRATTLLELMTIRAFHSKMLRCYSLGTAIGFRIRRGVLTDIP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A I I V F V S R K V H K Q W L S P L Q C L P T A L E G A G G I W C D V V E F S Y F G E P D H Q P T P K Q T F T D
                                                                                                                         ECOTSLFND1YN1SPVDRLVHQSMKPT1QSVDSSLTFNSDNNVDFLRPVSSRKKSREES
VVLNPSAYMQ1QKNPTDPLMFLGQDLSSNVQQHHFDIDRLJSNHVERMRMEIEEKRKTQ
                                                                                                                                                                                              ALRSNLQQVLAAVERNRWEEPPTVADDAQSCCGSNDEGDSEEERWKLAGEAQDTKKMCR
                                                                                                   /translation="MAVEAHHLNPLFSSNREMIHPVEASGVVYNTUMRYGTVPTFNPTV
                                                                                                                                                                          GRRIVEAVEÖGLMKTLRAKDDEINHIGKLNLFLEEKVKSLCVENQIWRDVAQSNEATVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        join(complement(21254. .22298), complement(20664. .21091))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     join(complement(24815, .25204), complement(24582, .24731), complement(24256, .24496), complement(23677, .24177), complement(23184, .23578))
                                                                                                                                                                                                                     VGMSMCRSCGKGBASVLLLPCRHMCLCSVCGSSLNTCPICKSPKTASLHVNLSS"
Complement(13950, .14024)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   join(complement(21254. .22367),complement(<20664. /gene="MGH6.5"
                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="SPTREMBL:09LDY9"
/note="hypothetical protein"
/gene="MGH6.4"
                                   /note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
/db_xref="SPTREMBL:Q9LE44"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/db_xref="SPTREMBL:09M7W5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="SPTREMBL:Q9LDF8"
          /db_xref="SPTREMBL:Q9LDD1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /protein_id="AAF35944.1"
                                                                            /protein_id="AAF35941.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="unknown protein"
/gene="MGH6.5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="unknown protein"
/gene="MGH6.6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(26470. ... /rpt_family="(GA)n" <26932. .>27192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AMQIELPFEDQSQPRN"
                                                                                                                                                                                                                                                                                                                        19881. .>20002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                             .20002)
                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=
                                                                                                                                                                                                                                                                                                                                                                        join(18851
19881. .200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA
                                                                                                                                                                                                                                                                                                    mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                             CDS
```

; 0

Cat flea hindgut a Cat flea HMT synap Cat flea HMT synap Cat flea HMT synap Cat flea HMT synap Human ORFX ORF2047

Rat cerebral organ DNA encoding a pro Human OCTN2 CDNA s Trichoderma reesei

DNA encoding a pro Rat OCT-1 gene. R Murine organic ani

Streptococcus olea Human secreted pro Stealth virus nucl Wilson disease gen Human ORFX ORF1716

Human cDNA encodin Human secreted pro Human organic cati Human 7TM clone H7 Novel nucleotide s

Human olfactory re Aspergillus oryzae Kaposi's sarcoma-a Nucleotide sequenc

Soybean hexose car

Atherosclerosis-as DNA encoding a pro

Human EST-derived

Human organic cati Human saccharide-t

us-09-911-667a-1.rng

Run on:

```
Human; organic cation transporter-like protein; OCTlp; transporter; transmembrane; nootropic; neuroprotective; neuroleptic; anticonvulsant; antibarkinsonian; antidepressant; cellular process; cell proliferation; screen; treatment; prevention; diagnosis; neurodegenerative disorder; Parkinson's; Huntington; ALS; amyotrophic lateral sclerosis; CNS disorder; central nervous system; schizophrenia; depression; behavioural; sleep disorder; eating disorder; Alzheimer's; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human organic cation transporter-like protein (OCTlp) cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                            ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                AAH32324
AAF12652
AAA10594
                                                                                                                                                                                                                                                                                                                                                                   AAZ32202
AAA30290
AAF82901
                                                                                                                                                                AAC03955
AAX84352
AAQ86301
                                                                                                                                                                                                                                                                                                          AAC82672
AAX08696
                                                                                                                              AAT08702
                                                                                                                                                     AAA09469
                                                                                                                                                                                                                                                  AAX26898
                                                                                                                                                                                                                                                            AAH98580
                                                                                                                                                                                                                                                                        AAS22844
                                                                                                                                                                                                                                                                                     AAZ33327
                                                                                                                                                                                                   AAC76161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
185..1831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag= a
/product= "OCTlp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAZ49686 standard; cDNA; 2562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MILL-) MILLENNIUM PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99WO-US14880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98US-0107932.
                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                            674
10732
1960
3489
3489
WO200000633-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    07-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sapiens
                                                                                                                                                                                         466.4
466.4
466.4
466.4
466.4
                                                                                                                             38.6
37.6
37.6
                                                                                                                                                                                                                                                                                                            36.2.2.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAZ49686;
                                                                                                        40.
                                                                                                                                                                                                                                                                                                                                                                     35.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA249686
  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               U
                                                                                                                                                                                                                                                                                                               000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human secreted exp
Human secreted pro
Human brain cell s
P. putida oxygenas
C glutamicum codin
C glutamicum codin
Human liver cell c
                                                                                                (without alignments)
6251.330 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rat organic cation
Human 5' EST isola
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human organic cati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description
                                                                                   ; Search time 351.36 Seconds
                                                                                                                                                           1 cccacgcgtccgggctttgt.....tgaggactgagngccaagtg
                                                                                                                                                                                                                                                                                                                                                      N. Geneseq_1101:*
/$1053/gcgdata/geneseqt/NA1980.DAT:*
/$1053/gcgdata/geneseqt/NA1981.DAT:*
/$1053/gcgdata/geneseqt/NA1981.DAT:*
/$1053/gcgdata/geneseqt/NA1981.DAT:*
/$1053/gcgdata/geneseqt/NA1981.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1984.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1985.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1986.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1980.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1980.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1980.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1991.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1991.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1991.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1991.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1991.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1991.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1992.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1991.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1991.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1991.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1991.DAT:*
/$1053/gcgdata/geneseqt/geneseqn/NA1999.DAT:*
                             Compugen Ltd
                                                                                                                                                                                                                                             hits satisfying chosen parameters:
                GenCore version 4.5
Copyright (c) 1993 - 2000 Comp
                                                                                                                                                                                                                   930621 seqs, 428662619 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUMMARIES
                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAZ42410
AAA45312
AAA16697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAH68534
AAV49559
AAV49558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAH57556
AAF26353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAH68313
                                                                 sw model
                                                                                      March 7, 2002, 23:46:32
                                                                                                                                                                                  IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                 using
                                                                                                                                                                                                                                                                   seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                   N_Geneseq_1101:*
                                                                                                                                   US-09-911-667A-1
2562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2562
1906
480
480
3580
4366
2268
309406
1662
1888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query
Match Length
                                                                nucleic search,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       200.9
14.0
14.0
2.6
2.6
1.9
1.9
1.9
                                                                                                                                                                                                                                             Total number of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2550
5229.6
447.4
3529.8
66.2
66.2
63
49
49
46.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
                                                                                                                                       Title:
Perfect score:
                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                   Minimum DB
Maximum DB
                                                                    OM nucleic
                                                                                                                                                             Sequence:
                                                                                                                                                                                                                      Searched:
                                                                                                                                                                                                                                                                                                                                                     Database
```

Result

Š.

us-09-911-667a-1.rng

999

2

```
caagaagaccatggccctgtgctttgtcatcttctccttctgcagcctcctgctgtttat 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cctggctgccctggcctcctgctttttgcccattgagaccaaaggcggaggactgcagga 1740
                                                                                                                                                                                                                                                                      caccetetetgagtttecaggtgteettgtgaetetgtggattattgaecgeetgggggg
                                                                                                                                                                                                                                                                                                                                                                                                    gaggatagcaactgaaaacggagctcccatgccgctggggaaactcatcatctccagaca
                                                                                                                                                                                                                           gaggatagcaactgaaaacggagctcccatgccgctggggaaactcatctccagaca
                                                                                                                                                                                                                                                                                                                                                                              caccetetetgagttteeaggtgteettgtgaetetgtggattattgaecgeetgggggeg
ctggggaaatatctcagaccagtacggcaggaaaacagggctgaagatcagcgtgctgtg
                                                                                                                                                                                                                            1021
                                                                                                                                                                                                                                                         1081
                                                                                                                                                                                                                                                                                     1141
                                                                                                                                                                                                                                                                                                     1201
                                                                                                                                                                                                                                                                                                                   1201
                                                                                                                                                                                                                                                                                                                                  1261
                                                                                                                                                                                                                                                                                                                                                1261
                                                                                                                                                                                                                                                                                                                                                                              1321
                                                                                                                                                                                                                                                                                                                                                                                             1381
                                                                                                                                                                                                                                                                                                                                                                                                           1381
                                                                                                                                                                                                                                                                                                                                                                                                                          1441
                                                                                                                                                                                                                                                                                                                                                                                                                                        1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1561
                                                                                                      781
                                                                                                                                                                                               961
                                                                                                                                                                                                             1021
                                                                                                                                                                                                                                                                        1141
                                                                                                                                                                                                                                                                                                                                                                1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1681
                                                                                                                       841
                                                                                                                                                                  901
                                                                                                                                                                                 961
                                                                                                                                                                                                                                           1081
               501
                                             561
                                                          721
                                                                         721
                                                                                        781
                                                                                                                                                   901
501
                              561
                                                                                                                                                              Db
                                                                                                                                                                                          QQ
                                                                                                                                                                                                        ò
                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                       οχ
                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                      O.Y
Db
                                                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                             QQ
                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                         Op
                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ω
             q
                              òγ
                                          g
                                                       ò
                                                                         qq
                                                                                        ò
                                                                                                    g
                                                                                                                    ò
                                                                                                                                   Ω
                                                                                                                                               οy
                                                                                                                                                                               ò
                                                                                                                                                                                                                                   ö
                                                                                       The present sequence is a cDNA encoding human OCTIP (organic cation transporter-like protein), a member of the superfamily of sugar and other transporter molecules that have 12 transmembrane domains.

The sequence is derived from a human foetal brain cDNA library. The protein is highly expressed in brain tissue and has nootropic, neuroprotective, neuroleptic, anticonvulsant, antiparkinsonian, antidepressant activities. The present sequence is used to requise a variety of cellular processes e.g. cell proliferation, differentiation and survival, screen OCTIP modulators and detect mutation in OCTIP gene. OCTIP modulators can be used to treat or prevent chronic neurodegenerative disorders (e.g. Allzheimer, Parkinson's, Huntington's and ALS). CNS disorders (e.g. schizophrenia, panic, depression), behavioural, sleep and eating disorders.
                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       900
                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                               ggacatggaggagttattccagctaaggcagctgccggttgtgaaattccgtcgcac
                                                                                                                                                                                                                                                                                                                                                                                                                                                               tggaaaatttcagtggaagctgtctgttctcactggcttggcttggatggctgatgccat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tggaaaaatttcagtggaagctgtctgttctcactggcttggcttggatggctgatgccat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ggagatgatgatcctcagcatcctggcaccacagctgcattgcgagtggaggctcccaag
                                             New nucleic acid encoding human organic cation transporter-like protein, used for prevention, treatment and diagnosis of \epsilon.g. neurological, behavioural or sleep disorders
                                                                                                                                                                                                                                   ;
                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                               609 T; 2 other;
                                                                                                                                                                                                                     21;
                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                    Score 2560; Di
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                .;
G
                                                                                                                                                                                               749
                                                                                                                                                                                                ن
                                                                                                                                                                                                                    Query Match

99.9%; Scc
Best Local Similarity 100.0%; Pr
Matches 2561; Conservative 0;
                                                                           English
                                                                                                                                                                                                682
         MA.
                                                                                                                                                                                                Ą;
         Glucksmann
                                                                           1; 100pp;
                                                                                                                                                                                               Sequence 2562 BP; 520
                       WPI; 2000-137069/12.
P-PSDB; AAY44633.
                                                                           2; Fig
                                                                           Claim
                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                            21
                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                          81
                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
   g
                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                    ογ
Dp
                                                                                                                                                                                                                                                                                                                                                                  Oy
Db
                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                            Oy
Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                         δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                   ò
```

1080

840 840 900 900 960 960 1200

1320 1320

```
Human; organic cation transporter-like protein; OCTIp; transporter; transmembrane; nootropic; neuroprotective; neuroleptic; anticonvulsant; antiParkinsonian; antidepressant; cellular process; cell proliferation;
                                                                                                                                                                                                              2160
                                                                                                                                                                            2160
                                                                                                                                                                                       2340
                                                                                                                                                                                                                                                             2460
                                                                                                                                                                                                                                                                                                 2460
                                                                                                                                                                                                                                                                                                            ccaagagatccagatgtgtcctggggacagctgggtcttgcaccaggtgacaacctcaaa 2520
                                                                 2040
                                                                                                                            2040
cctggctgccctggcctcctgctttttgcccattgagaccaaaggcggaggactgcagga 1740
                                                                                                                                                                                                                                                                                     gtccagccaccgggagtggggccaggagatggtcggccgaggaatgcacggtgcaggtgt
                                                                                                                                                                taggagggtetggtaatgecagcaaccaatcagacaccaccagagtcacccgggccaaac
                                                                                                                                                                                                                                       tttcttctttgaaattgcaggcgatctaggtgtggtctgagcagctatttcctggcaggg
                  Rat organic cation transporter-like protein (OCTlp) partial cDNA.
                                                                                                                                                                                                                                                                                                                                    BP
                                                                                                                                                                                                                                                                                                                                                                              AAZ49689 standard; cDNA; 1906
                                                                                                                                                                                                                                                                                                                                                                                                      07-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                           AAZ49689;
                                                                                                                                                                                                                                                                                                 2401
                                                                                                                                                                 2101
                                                                                                                                                                             2101
                                                                                                                                                                                         2161
                                                                                                                                                                                                     2161
                                                                                                                                                                                                                2221
                                                                                                                                                                                                                           2221
                                                                                                                                                                                                                                        2281
                                                                                                                                                                                                                                                   2281
                                                                                                                                                                                                                                                                                      2401
                                                                                                                                                                                                                                                                                                              2461
                                                                                                                                                                                                                                                                                                                         2461
                                                                                                                                                                                                                                                                                                                                      2521
                               1741
                                                                               1861
         1681
                   1741
                                            1801
                                                                   1861
                                                        1801
                                                                                                                                                                                                                                                                                                                                                                        AAZ49689
                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                               Dp
                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                            Dp
                                                                                                                                                   qq
                                                                                                                                                                          ag
                                                                                                                                                                                       QY
Db
                                                                                                                                                                                                             Oy
Db
                                                                                                                                                                                                                                    οý
                                                                                                                                                                                                                                                              òγ
         g
                   ò
                               g
                                           ò
                                                     QQ
                                                                   ò
                                                                             qq
                                                                                          ò
                                                                                                     g
                                                                                                                  οy
                                                                                                                                         οy
                                                                                                                                                              οý
```

```
The present sequence is a partial cDNA encoding rat OCTIP (organic cation transporter-like protein) and derived from rat frontal cortex library. It was used to design primers to isolate OCTIP cDNA from human foctal brain cDNA library. Human OCTIP is a member of the superfamily of sugar and other transporter molecules that have 12 transmembrane domains. It is highly expressed in brain tissue and has nootropic, antidepressant activities. The OCT-like protein is used to requiste a variety of cellular processes e.g. cell proliferation, differentiation and survival, screen OCTIP modulators and detect mutation in OCTIP gene. OCTIP modulators can be used to treat or prevent chronic neurodegenerative disorders (e.g. Alzheimer's, Parkinson's, depression), behavioural, sleep and eating disorders.
screen; treatment; prevention; diagnosis; neurodegenerative disorder; Alzheimer; Parkinson's; Huntington; ALS; amyotrophic lateral sclerosis; CNS disorder; central nervous system; schizophrenia; depression: behavioural; sleep disorder; eating disorder; rat; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gcaagagtgggtgctctcatcactccgttcatcgcccaggtgatgctggaatcctctgtg 1645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cttgtgactctgtggattattgaccgcctgggggggaagaagaccatggccctgtgcttt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         acacctgaggtctaccccacggcaacgcggccctcggcctgggcactgcagcggcatg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acgcctgaagtgtatccaacggcgacgagggcgctgggcctgggcacctgcagcggcatg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New nucleic acid encoding human organic cation transporter-like protein, used for prevention, treatment and diagnosis of e.g. neurological, behavioural or sleep disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20.7%; Score 529.6; DB 21; Length 1906;
llarity 73.9%; Pred. No. 2.7e-138;
Conservative 0; Mismatches 254; Indels 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1906 BP; 379 A; 547 C; 556 G; 424 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Fig 4; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       (MILL-) MILLENNIUM PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                  98US-0107932.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Glucksmann MA;
                                                                                                                                                                                                                                                                                                                                         99WO-US14880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-137069/12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 Similarity
800; Conserv
                                                                                                                                                                                                                     WO200000633-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Goodearl AJ,
                                                                                                                                                                                                                                                                                                                                                                                                  30-JUN-1998;
                                                                                                                                                                                                                                                                                 06-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Si
Matches 800;
                                                                                                                                                                Rattus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
               NAMES OF COLOR COL
```

99WO-IB00712.

us-09-911-667a-1.rng

```
09-APR-1999;
                                                                                                                                                                                                                                                                                                                                        199
                                                                                                                                                                                                                                                                                                                                                                                     319
                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                   Op
                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                                                                                                                                    셤
οy
                                                                                                                                                                                                                                                                                                               οχ
                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                 ctttgttcataacctgtggatctacatgggaagactacccatattaggagggtctggtaa 2116
                                                                                                                                                                                                                                                                1825
                                                                                           aggococaactgggggaactgattgtcactgccgacatcaagaac-tcacccaagagtatg 1944
                                                                                                                                                                                                                                                                                                                                                                    Human; 5' EST; expressed sequence tag; secreted protein; diagnosis; gene therapy; chromosome mapping; upstream regulatory sequence; forensic; location; development; protein synthesis; stability; regulation; identification; ss.
                                                                                                                                                   732 cogococcaggaagatggggctgcattcactccaggggggttcttccgtggtgggggaaagg
                                                                                                                                                                                            2175 -caaaatatctctctgtagataccgtccaggctcaggcccatgtgacacctgctgtccac
                                                                                                                                                                                                                                         2117 tgccagcaaccaatcagacaccaccaga--gtcacccggccaaaccctcagtgaacaac
                                                                                                                                                                                                                                   2234 ccaccggacctgttcagtaggtttctcccacacccacagccccaggctttcttctttgaa
                                                                                                                                                                                                                                                           2294 attgcaggcgatctaggtgtggtctgagcagctatttcctggcaggggccccccggtttg
                                             911 tgtccaaagatctccatagatacagtctcagcccagacccctgtgacacccgccat----
--tccacccagggatgggggatgtttgctctaggggggttctctgtatatgtggtgaaag
                                                                                                                                                                      EST isolated from a cDNA library SEQ ID NO:169.
                                                                                                                                                                                                                                                                                                                        BP.
                                                                                                                                                                                                                                                                                                                        CDNA; 480
                                                                                                                                                                                                                                                                                                                                              01-FEB-2000 (first entry)
                                                                                                                                                                                                                                                                                                                        AAZ42410 standard;
                                                                                                                                                                                                                                                                                        WO9953051-A2
                                                                                                                                                                                                                                                                                 cc 2355
                                                                                                                                                                                                                                                                                                                                                                                                                       21-OCT-1999.
                                                                                                                                                                                                                                                                                                                                   AAZ42410;
                                                                                                                                                                                                                                                                                                                                                          Human 5'
                                                                                                                                                                                                                                                                                 2354
                                                                                                                                                                                                                                                                                            1079
                                                                                                                                                                                                                                                                                                                                                                                                  Homo
  1646
            375
                                                           495
                                                                                             1886
                                                                                                                                          1999
                                                                                                                                                                2057
                                                                                                                                                                                                                                                                                                                  1766
                                                                      1826
                                                                                                                                                                            792
                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                              ογ
                                                                                                                                                             ος
Op
                                                                                                                                                                                     δ
                                                                                                                                                                                                요
                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                          Óγ
                                                        Q
                                                                   δ
                                                                               g
                                                                                          ŏ
                                                                                                     qq
                                                                                                                 οy
                                                                                                                           Q
                                                                                                                                      οy
                                                                                                                                                   qq
                        ŏ
                                  qq
                                               οy
```

```
AAX42265 to AAX43075 represent novel 5' expressed sequence tag (EST)

Sequences, corresponding to human secreted proteins. AAX64651 to

AAX6643052 The 5' ESTS can be used for producing secreted human gene

AAX43052 The 5' ESTS can be used for producing secreted human gene

products. They can be used to identify and isolate 5' untranslated

credions (UTRS) and upstream regulatory regions which control the

credions (UTRS) and upstream regulatory regions which control the

credions (UTRS) and upstream regulatory regions which control the

credions (UTRS) and upstream regulatory regions which control the

credions (UTRS) and upstream regulatory regions which control the

credions (UTRS) and upstream regulatory regions which control the

credions (UTRS) and upstream regulatory of protein synthesis, as

well as stability of mRNA. The ESTs are also useful as probes for

chromosome mapping, and to obtain full length clones. The ESTs can

diagnostic procedures to identify individuals having genetic diseases

cresulting from abnormal gene expression. The products may also be used in

cresulting from abnormal gene expression. The products may also be used in

cresulting from abnormal gene expression of a polypeptide or the

used for directing extracellular secretion of a polypeptide or the

inco a cell. The proteins encoded by the EST sequences may be useful in

treating a variety of human conditions. Secreted proteins have

created proteins and the identification of new secreted proteins is

valuable. AAX42249 to AAX42264 and AAX64064 to AAX6450 represent

sequences used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel secreted protein 5' expressed sequence tag sequences used in diagnostic, forensic, gene therapy, and chromosome mapping procedures
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17.5%; Score 447.4; DB 21; Length 480; 97.7%; Pred. No. 1.6e-115;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 480 BP; 102 A; 115 C; 154 G; 100 T; 9 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
                                                                                                                                                                     ۲,
                                                                                                                                                                     Giordano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; Page 265-266; 837pp; English.
                                                                                                                                                                         Duclert A,
98US-0057719.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   464; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                            Dumas Milne Edwards
                                                                                                                                                                                                                                        WPI; 2000-038446/03
                                                                                                                                                                                                                                                                           P-PSDB; AAY64796
                                                                                                      (GEST ) GENSET
                                   28-APR-1998;
       09-APR-1998;
```

5;

```
AAA43426 to AAA45925 represent specifically claimed secreted expressed sequence tags (sESTs), isolated from human, mouse, chicken and rat tissue sources. The sESTs can have a range of activities depending on the tissues they were isolated from. The activities depending on the tissues they were isolated from. The activities depending on the tissues they were isolated from. The activities include: chemotactic; proliferative; immunomodulatory; haematopoietic; chemotactic; antibacterial; antifungal; antiviral; antidiabetic; antibacterial; antifungal; antiviral; antidiabetic; antibacterial; antifungal; antiviral; antidiabetic; antibacterial; antipactionice; osteopaths; neuroprotective; anticonvulsant; and antidepressant. The sESTs can be used for gene therapy and in vaccines. The sESTs are useful as probes for the identification and isolation of full-length cDNAs and genomic DNA anceleuse which correspond to the sESTs. Proteins encoded by the sESTs are useful in assays for determining biological activity and raising antibodies. They may be useful for treatment of autoimmune disorders (multiple sclerosis, insulin dependent diabetes), allergic conditions (asthma), myeloid or lymphoid cell deficiencies, wounds, burns, ulcers, osteoporosis, osteoarthritis, central nervous system disorders (Alzheimer's, Parkinson's, Huntington's disease, stroke), coagulation
                                                                                                                                                                                                                                                                                                                             Human; mouse; chicken; rat; secreted expressed sequence tag; SEST; expressed sequence tag; EST; probe; chemotactic; proliferative; immunomodulatory; haematopoletic; chemotactic; analgasic; haemostatic; thrombolytic; antiinflammatory; cytostatic; antibacterial; antifungal; antiviral; antidiabetic; antiasthmatic; vulnerary; antiparkinsonian; antiuleer; osteopathic; neuroprotective; nootropic; antipsoriatic; cerebroprotective; anticonvulsant; antidepressant; gene therapy; vaccine; autoimmune disorder; multiple sclerosis; allergic condition; insulin dependent diabetes; asthma; myeloid cell deficiency; ulcer; lymphoid cell deficiency; burn; osteoporosis; osteoathhritis; central nervous system disorder; Alzheimer's disease; stroke; parkinson's disease; Huntington's disease; coagulation disorder; haemophilia; thrombosis; inflammatory disorder; Crohn's disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Isolated polynucleotides, and encoded proteins, comprising secreted expressed sequence tags (SESTs), useful for treating various disorders such as autoimmune, infectious, and central nervous system disorders -
:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Evans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LaVallie ER, Collins-Racie LA,
                                                                                                                                                                                                                                                                                             Human secreted expressed sequence tag SEQ ID NO:1887.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tumour; infection; depression; psoriasis; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; Page 679; 803pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bowman MR;
                                                                                                                                                           BP
                                                                                                                                                      AAA45312 standard; cDNA; 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98US-0104436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US24206
                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (GEMY ) GENETICS INST INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Treacy M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             McCoy JM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-317938/27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200021991-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                 21-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20-APR-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ۵,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Jacobs K,
                                                                                                                                                                                                       AAA45312;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Merberg
                                                                                                                 RESULT
AAA45312
                                              g
                                                                                                                                                                                                       ò
```

```
;;
0
disorders (haemophilia, thrombosis), inflammatory disorders (Crohn's Adsaase), tumours, bacterial, fungal or viral infections, depression and psoriasis. AAA45926 to AAA4531 represent linker variants which are given in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; secreted protein; immunestimulant; immunesuppressant; virucide; antibacterial; antifungal; cytostatic; antiinflammatory; dermatological; antidabetic; antiasthmatic; antiarthritic; antirheumatic; protozoacide; antithyroid; immune deficiency; severe combined immunedeficiency; SCID; infection; HIV; hepatitis; malaria; autoimmune disorder; systemic lupus; connective tissue disease; multiple sclerosis; erythematosis; rhematoid arthritis; autoimmune pulmonary inflammation; asthma; Guillain-Barre syndrome; autoimmune thyroiditis; myasthenia gravis; insulin dependent diabetes mellitus; graft-versus-host-disease; autoimmune inflammatory eye disease; allergy; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human secreted protein clone as180_1 nucleotide sequence SEQ ID NO:159.
                                                                                                                                                                                                                                                  1505
                                                                                                                                                                                                                                                                                                               1565
                                                                                                                                                                                        1386 agaccatggccctgtgctttgtcatcttctccttctgcagcctcctgctgtttatctgtg 1445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1745
                                                                                                                                                                                                                                                                                                                                           210
                                                                                                                                                                                                                                                  330
                                                                                                                                                         Gaps
                                                                                                                                                                                                                   9.0
                                                                                                                                                                                                                                                                                                                                                                           ttcaagcggcatatgtttacacacctgaggtctaccccacggcaacgcgggcctcggcc
                                                                                                                                                                                                                                                                                                                                            151 ttcaagcggcatatgtttacacacctgaggtctaccccacggcaacgcgggccctcggcc
                                                                                                                                                                                                                                                                                                                                                                                                                                         tgatgctggaatcctctgtgtacctgactctggcagtttacagtggctgctgctcctgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1686 ctgccctggcctcctgctttttgcccattgagaccaaaggcggaggactgcaggagtcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 359.8; DB 21; Length 401;
Pred. No. 5.5e-91;
0; Mismatches 7; Indels 0;
                                                                             Sequence 401 BP; 69 A; 119 C; 104 G; 109 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BP.
                                                                                                                         14.0%; S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAA16697 standard; cDNA; 3580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98US-0096622.
98US-0096815.
98US-0099229.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99WO-US18298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                           Matches 364; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1746 gccaccgggag 1756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               391 agccactcgag 401
                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200009552-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-AUG-1998;
04-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24-FEB-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAA16697;
                                                                                                                            Query Match
Best Local S
                                                                                                                                                                                                                                                                                                               1506
                                                                                                                                                                                                                                                                                                                                                                           1566
                                                                                                                                                                                                                                                                                                                                                                                                                                         1626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
AAA16697
                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          00000×0
                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                 Op
                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

```
AAH57556;
                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
AAH57556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ΩI
                                                                         qq
                                                                                                                       δ
                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY94898 to AAY94890, isolated from human secreted proteins given in AAY94898 to AAY94890, isolated from human adult brain, adult thyroid, adult retina, foetal carcinoma, adult blood, adult netral, foetal kidney, adult placenta, adult testis, whole embryo, adult cartilage, kidney, could prain, adult thymus, foetal placenta, adult uterus, adult tumour, and adult bladder, COMA libraries. The polymucleotides and proteins are predicted to have biological activities which would make them suitable for treating, preventing or ameliorating medical conditions in humans and animals: The polymucleotides can be used as markers for tissues in which the protein is preferentially expressed, as molecular weight markers on Southern gels, and as chromosome markers for tissues in which the protein is preferentially expressed, as molecular weight markers or southern gels, and as chromosome and be used as markers or to map gene positions. The proteins can be used in the treatment of immune deficiencies and disorders, such as severe combined immunedeficiency (SCID), as well as viral, bacterial, fungal and other infections. These infections include human immunodeficiency virus (HIV), hepatitis, herpesviruses, mycobacteria, leismania spp., malaria and candidasis. The proteins can be used to treat autoimmune disorders such as connective tissue disease, multiple sclerosis, systemic lupus candidasis. The proteins can be used to treat autoimmune inflammatoid arthritis, autoimmune pulmonary inflammation, daintenmune inflammatory eye disease. The proteins can also be used to treat allergic conditions, such asthma. AAA16698 to AAA16774 represent creat allergic conditions, such asthma. AAA16698 to AAA16774 represent conditions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                415 tggctttggaaaatttcagtggaagctgtctgttctcactggcttggcttggatggctga 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       475 tgccatggagatgatgatcctcagcatcctggcaccacagctgcattgcgagtggaggct 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  624 giccgaciccaacaaaggcaigciaggceicaicgictaccigggcaigaiggiggage 683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     684 cttcctctggggaggtctggctgaccggctgggtcggaggcagtgtctgctcatctcgct 743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 655 gctgtggactctgtactatggcatccttagtgcatttgcgcccgtgtatagctggatcct 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3; Gaps
                                                                                                                                                                                                                                                                                                                                         New polynucleotides encoding secreted proteins, which may have e.g. untritional, chemokine, immune slimulating or suppressing, hematopoiesis regulating, tissue growth, activin/inhibin antiinflammatory or tumor inhibition activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             535 cccaagctggcaggtggcattgctgacctcggtggtctttgtaggcatgatgfrcagctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              595 cacgetetggggaaatateteagaecagtaeggeaggaaaacagggetgaagateagegt
                                                                                                                                                                                          Collins-Racie LA, Evans C;
Steininger RJ, Spaulding V;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2.6%; Score 66.2; DB 21; Length 3580; 47.3%; Pred. No. 4.6e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Mismatches 258; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 3580 BP; 734 A; 942 C; 1024 G; 880 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          =
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 168; Page 613-614; 641pp; English
                                                                                                                                                                                          Lavallie ER, (
Agostino MJ, Fechtel K;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             990S-0115234.
990S-0119931.
990S-0120575.
990S-0132020.
99US-0096622.
98US-0105368
                                                                                                                                                 (GEMY ) GENETICS INST INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity 47.3 Matches 234; Conservative
                                                                                                                                                                                                                                      Clark HF,
                                                                                                                                                                                               MCCOY JM,
                                                                                                                                                                                                                                                                                  WPI: 2000-205979/18.
                                                                                                                                                                                                                      Treacy
                                                                                                                                                                                                                                                                                                       P-PSDB; AAY94977
                                                                                                          11-AUG-1999;
                                         12-FEB-1999;
18-FEB-1999;
                                                                                       30-APR-1999
                                                                                                                                                                                                                      ď
                                                                                                                                                                                               Jacobs K,
                                                                                                                                                                                                                                           Wong GG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                      Merberg
```

q ò qq ò qq οy q õ

ò

```
AAH57161 to AAH57576 represent cell and tissue specific polynucleotide sequences (I). (I) can have cytostatic, immunomodulatory and neuroprotective activities, and can be used in gene therapy. (I) and proteins (II) encoded by then are used in high throughput screening assays to select DNA molecules, peptide nucleic acids, mimetics, peptides, proteins, agonists, antagonists, antibodies or their fragments, immunoglobulins, inhibitors, drug compounds and paramaceutical agents. Expression of (I) in a sample indicates the differentiation of embryonic stem cells into a tissue selected from brain, heart, kindney, liver, lung, skeletal muscle or pancreatic tissues. (I) and (II) are used to produce an expression profile that defines a metabolic or developmental process, treatment, condition, disease or disorder. The gene profile can be used for diagnosis, prognosis or monitoring of treatments and for investigating a predisposition to a disorder where the gene is associated with a cancer, immunopathology or neuropathology.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; tissue specific; diagnosis; brain; heart; skeletal muscle; lung; liver; uterus; ovary; stomach; intestine; kidney; pancreas; ss; metabolic disease; developmental disease; cytostatic; immunomodulatory; neuroprotective; gene therapy; cancer; immunopathology; neuropathology.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New cell and tissue specific polynucleotides useful for diagnosis, prognosis or monitoring of treatments for disorders where the gene is associated with a cancer, immunopathology or neuropathology -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 924 ttggatgattggtggcgtgtacgcagctgctatggcctgggccatcatcccccactatgg 983
744 ctcagtcaacagcgtcttcgccttcttctcatcttttgtccagggttacggcactttcct 803
                                                                                                                                                                                                                                                                             gtatgccgagttccttcccatgaaagccagagctaaatgtattttgctgattgaggtatt
                                                                                                                                                                                        cttctgccgcctactttctggggttgggattggagggtccatccccattgtcttctccta
                                                                                                                                                                                                                                                                                                                                                                       864 tttctccgagtttctggcccaggagaaacgaggggagcatttgagctggctctgcatgtt
                                                                                                   715 ggtgetccggggcctggtgggtctcggagg---agttccccagtcggtgacgct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ctgggccatcgggacagtgttcgaggtcgtcctggctgtgttcgtgatgcccagcctggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human brain cell specific cDNA sequence SEQ ID NO:396.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sornasse T, Seilhamer JJ, Watson GA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; Page 309-310; 327pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAH57556 standard: cDNA; 4366 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-NOV-2000; 2000WO-US30396.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0163508.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (INCY-) INCYTE GENOMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-SEP-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    892 ctggcgttggctgct 906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    984 giggagitticagai 998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-291057/30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200132927-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              04-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-MAY-2001.
```

```
(DKFZ-)
(MEDI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        461
                                                                                                                                                                                                                                                                                                                                                                                                                            417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Óλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
 ò
                                                   :
                                                                                                                                                                                                                                                                                                                                                                                     1331 tiggatgattggtggtgtgtacgcagctgctatggcctgggccatcatcccccactatgg 1390
                                                                                                                                                                                                                                                   ctcagtcaacagcgtcttcgccttcttcatctttgtccagggttacggcatttcct 1210
                                                                                                                                                                                                                                                                                                    .211 cttctgccgcctactttctggggttggggttggagggtccatccccattgtcttctccta 1270
                                                                                                                                                                                                                                                                                                                                        1031 giccgactccaacaaaggcaigciaggccicaicgictaccigggcaigaiggiggagc 1090
                                                                                                                                                                                                                                                                                                                                                                 ctgggccatcgggacagtgttcgaggtcgtcctggctgttcgtgatgcccagcctggg 891
                                                                                                                                                                                                                                       gctgtggactctgtactatggcatccttagtgcatttgcgcccgtgtatagctggatcct 714
                                                                                                                                                                                                                                                                                 ggtgctccggggcctggtgggcttcgggatcggagg---agttccccagtcggtgacgct 771
                                                                                                                                                                                                                                                                                                                         gtatgccgagttccttcccatgaaagccagagctaaatgtattttgctgattgaggtatt 831
                                                                       415 tggctttggaaaatttcagtggaagctgtctgttctcactggcttggcttggatggctga 474
                                                                                           911 tggccacggccgcttccagtggacactgtattttgtgcttggtctggcgctgatggctga 970
                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oxygenase; transgenic plant; detection; amino acid production; vitamin production; steroid production: dialcohol production; sofidized aromatic compound production; dialdehyde production; optically active epoxide production; dicarboxylic acid production; bloconversion; ORFO4677; ds.
                                                                                                                                                        cccaagetggcaggtggcattgctgacctcggtggtctttgtaggcatgatqtccagctc
                                                                                                                                                                                                cacgetetggggaaatateteagaeeagtaeggeaggaaaaeeagggetgaagateagegt
                                                                                                                                                                                                                    cttcctctggggaggtctggctgaccggctgggtcggaggcagtgtctgctcatctcgct
                                                                                                                 475 tgccatggagatgatgatcctcagcatcctggcaccacagctgcattgcgagtggaggct
                                                    3;
                               Length 4366;
  Sequence 4366 BP; 916 A; 1187 C; 1195 G; 1068 T; 0 other;
                                                    Indels
                               Score 66.2; DB 22;
Pred. No. 5.1e-08;
0; Mismatches 258;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TIGR-) TIGR INST GENOMIC RES.
(QUIA-) QUIAGEN GMBH.
(GBFB ) GES BIOTECHNOLOGISCHE FORSCHUNG MBH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            putida oxygenase encoding DNA ORF04677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAF26353 standard; DNA; 2268
                                2.6%;
Similarity 47.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-JUL-2000; 2000WO-EP07244.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99DE-1035087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-MAY-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                              1391 giggagitticagai 1405
                                                     Matches 234; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                           ctggcgttggctgct 906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pseudomonas putida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200107629-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-FEB-2001
                                   Query Match
                                             Local
                                                                                                                                                           535 (
                                                                                                                                                                                                                                                               1151
                                                                                                                                                                                                                                                                                                                                                                     832
                                                                                                                                                                                                     595
                                                                                                                                                                                                                        1001
                                                                                                                                                                                                                                            655
                                                                                                                                                                                                                                                                                    715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAF26353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                             ô
                                                                                                                                                                                                                                                                                                                                               Op
                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                qq
     S
                                                                                              g
                                                                                                                    ò
                                                                                                                                        q
                                                                                                                                                          ò
                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                   ò
                                                                             ó
```

```
This invention describes novel DNA sequences (I) that express products chaving the biological function of oxygenases. The invention also describes (I) recombinant expression vectors containing (I): (2) production of oxygenases by culturing (I): (2) production of oxygenases by culturing cells of the vector of (I): (3) production of oxygenases by culturing cells of the vector of (I): (3) production of oxygenases by culturing cells of (C): (4) (partial) expression products (II) of (I), and synthetic antibodies (Ab) specific for (II): (6) hybridoma cells that produce antibodies (Ab) specific for (II): (6) hybridoma cells that produce compound their fragments, are useful for the following: (i) expression of crecombinant oxygenases; (ii) useful as probes and primers for detection. Isolation and amplification of full-length conducts are useful for compounds, optically active epoxides, dialcohols, dialdehydes and carboxylic acids. The transformed cells that express them are used for dicarboxylic acids. The transformed cells that express them are used for bioconversion of aromatic and aliphatic compounds. The oxygenases have cert endificult or impossible to do with conventional oxidizing agents.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gctttggaaaatttcagtggaagctgtctgttctcactggcttggcttggatggctgatg 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41 gctttaccccgtttcactggatggtcatggcctggtgcggcctgctgctgatttcgacg 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tetaccgettcatcgccggcctgggctgtggcggcctgatgcccaacgccgtggcactga 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           893
                                                                                                                                                                                                                                                               ot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ccatggagatgatgatcctcagcatcctggcaccacagctgcattgcgagtggaggctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ccccqttgcaggctggtgcactgggcagctgttcggcattcggcatgttcggcgccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cgctctggggaaatatctcagaccagtacggcaggaaaacagggctgaagatcagcgtgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               221 tggccttcggcagcctggccgaccgcatcgggcgcaagaagggcattgccatctgtttcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tgtggactctgtactatggcatccttagtgcatttgcgcccgtgtatagctggatcctgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cettgtteteggggggggaccatecteaatggetttgecageaacecgageggtttggea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tgctccggggcctggtgggcttcgggatcggaggtt---ccccagtcggtgacgctgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 atgeegagtteetteecatgaaageeagagetaaatgtattttgetgattgaggtattet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tgaacgaatacgcacccaagcgcctgcgcagcacgctggtggcgatcatgttcagtggtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gggccatcgggacagtgttcgaggtcgtcctggctgtgttcgtgatgcccagcctgggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  caagetggcaggtggcattgctgaceteggtggtetttgtaggcatgatgtecageteca
                                                                                                  Ą
                                                                                              Duesterhoeft
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 2268;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2.5%; Score 63; DB 22; Length 22
45.9%; Pred. No. 2.9e-07;
tive 0; Mismatches 295; Indels
                                                                                                                                                                                                                                                               New DNA encoding a bacterial oxygenase, useful e.g. for amino acids or vitamins, also derived transgenic plants
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2268 BP; 371 A; 713 C; 732 G; 450 T; 2 other;
                                                                                    Hoheisel J, Du
                                                                                                                                     Straetz M,
DKFZ DEUT KREBSFORSCHUNGSZENTRUM
                                      MEDIZINISCHE HOCHSCHULE HANNOVER
                                                                                                                                                                                                                                                                                                                                                                        Claim 3a; Page 35-36; 47pp; German.
                                                                                                  В,
                                                                                                                                 Moore E,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 2.5%
Best Local Similarity 45.9%
Matches 253; Conservative
                                                                                                  Venter C,
Timmis KN,
                                                                                                                                                                                                       WPI; 2001-168556/17
                                                                                                     Fraser CM,
Hilbert H,
```

1;

244 ttaagetetgeaacgetgggeaceateggeteeacegegttetttggeatggegategge 303

tccacgctctggggaaatatctcagaccagtacggcaggaaaacagggctgaagatcagc 304 gctgtgttcattggtcgactgtcagaccgcgtgggccgaaaagcagcggtgattggatcc gtgctgtggactctgtactatggcatccttagtgcatttgcgcccgtgtatagctggatc

ctcccaagctggcaggtggcattgctgacctcggtggtctttgtaggcatgatgtccagc

533

ò

g

364 gtgetgattetetetgtetteaceatgetgtgtgeatttgetecaaacecatgggtgtte 423

653

Q δ Ω

ò

QQ ò q ò q

ò

713 ctggtgctccggggcctggtgggcttcgggatcggaggagttccccagtcggtga---cg

769

603

830 ttctgggccatcgggacagtgttcgaggtcgtctggctgtgttcgtgatgcccagcctg

890 ggctggcgttggctgctcatcctctagctgtcccgctcctctttgccgt 942 | | | | | | | | | | | | | 604 gaggagtggggctggcttcatgttcctcatcgcgttgatcccactggttgt 656 Coryneform bacterium; amino acid synthesis; vitamin; saccharide;

organic acid synthesis; ds. Corynebacterium glutamicum

EP1108790-A2.

20-JUN-2001.

C glutamicum coding sequence fragment SEQ ID NO: 7069.

(first entry)

26-SEP-2001

AAH68534;

BP.

AAH68534 standard; DNA; 309400

AAH68534

qq

ŏ

652

œ

```
The present invention provides a number of nucleotide and protein agequences from the Corynetorm bacterium Corynebacterium glutamicum. These are usefu for identifying the mutation point of a gene derived from a mutant of coryneform bacterium, measuring expression amount and analysing the expression profile or expression pattern of a gene derived from Coryneform bacterium, and identifying a homologue of a gene derived from coryneform bacterium. Coryneform bacteria are useful for producing amino acids, nucleic acids, vitamins, saccharides and organic acids, particularly L-lysine. The present sequence is a nucleic acid described in the exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel polynucleotides derived from Coryneform bacteria, for identifying mutation point of a gene, measuring expression of a gene, analysing expression profile or pattern of a gene and identifying homologous gene
   953
                                580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ξ
Yokoi
                                                                                                                                                                                                                                                                                             Coryneform bacterium; amino acid synthesis; vitamin; saccharide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 8; SEC ID NO: 3348; 246pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ochiai K,
                                                                                                                                                                                                                                                                glutamicum coding sequence fragment SEQ ID NO: 3348.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1356 BP; 230 A; 388 C; 383 G; 355 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             H, Ando S, Hayashi M,
Ikeda M, Ozaki A;
                                                                                                                                                                      BP.
                                                                                                                                                                      AAH68313 standard; DNA; 1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (KYOW ) KYOWA HAKKO KOGYO KK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16-DEC-1999; 99JP-0377484.
07-APR-2000; 2000JP-0159162.
03-AUG-2000; 2000JP-0280988.
                                                                                                                                                                                                                                                                                                                                                                                                                                   18-DEC-2000; 2000EP-0127688.
                                                                                                                                                                                                                                                                                                                                           Corynebacterium glutamicum.
                                                                                                                                                                                                                                                                                                              organic acid synthesis; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mizoguchi H,
Senoh A, Ike
                                                                                                                                                                                                                                  (first entry)
                                                             964
                                                                             2001-376931/40.
                                                              ggctgcctgaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P-PSDB; AAG93094
                                                                                                                                                                                                                                                                                                                                                                        EP1108790-A2
                                                                                                                                                                                                                                  26-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nakagawa S,
Tateishi N,
                                                                                                                                                                                                                                                                                                                                                                                                      20-JUN-2001
                                                                                                                                                                                                   AAH68313;
                                                             954
                                                                                                                                                       AAH68313
                              pp
                                                                                        qq
                                                                                                                                                                                      ò
                                                           ò
```

```
Novel polynucleotides derived from Coryneform bacteria, for identifying mutation point of a gene, measuring expression of a gene, analysing expression profile or pattern of a gene and identifying homologous gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present invention provides a number of nucleotide and protein sequences from the Coryneform bacterium Corynebacterium glutamicum. The are useful for identifying the mutation point of a gene derived from a mutant of coryneform bacterium, measuring expression amount and
                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; SEQ ID NO: 7069; 246pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                          Σ
                                                                                                                                                                                                                                                                                                         Mizoguchi H, Ando S, Hayashi
Senoh A, Ikeda M, Ozaki A;
                                                                                                                                                                                                                                                                                                                                             WPI; 2001-376931/40.
                                                                                                                                                                                                                                                                                                         ώż
                                                                                                                                                                                                                                                                                                         Nakagawa
Tateishi
ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gatgccatggagatgatgatcctcagcatcctggcaccacagctgcattgcgagtggagg 532
                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                3.
                                                                                                                                                                                                                                                                                                                                                                                                                    1.9%; Score 49; DB 22; Length 1356; 45.5%; Pred. No. 0.0019;
                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches 255; Indels
```

Conservative

Best_Local Similarity Matches 215; Conserv

473 184

ò qq

Query Match

These

Ĥ

Yokoi

Α,

Ochiai

16-DEC-1999; 99JP-0377484. 07-APR-2000; 2000JP-0159162. 03-AUG-2000; 2000JP-0280988.

18-DEC-2000; 2000EP-0127688.

(KYOW) KYOWA HAKKO KOGYO KK

```
96JP-0301429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gtcca 1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1569 gacca 1573
     13-NOV-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAV49558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                    s,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1621
                                                                                                                                       Kato
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAV49558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
        SO XX CCC CCC CCC XX DX 
                                                                                                                                                                                                                                                                                                                                                                                                          ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Transmembrane domain; human; nutrition; cytokine; cell proliferition; differentiation; immune system; stimulator; suppressor; regulator; heamatopoiesis; activin; inhibitor; chemotactic; chemokinetic; receptor; haemostatic; thrombolytic; ligand; anti-inflammatory; tumour; ds.
analysing the expression profile or expression pattern of a gene derived from Coryneform bacterium, and identifying a homologue of a gene derived from coryneform bacterium. Coryneform bacteriu proficing amino acids, nucleic acids, vitamins, saccharides and organic acids, particularly L-lysine. The present sequence is a nucleic acid described in the exemplification of the invention.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from the European Patent Office.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db 228087 gigctgattctctctgtcttcaccatgctgtgtgcatttgctccaaacccatgggtgttc 228146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Db 227907 gacggctacgacctcattgtgtacggcaccgtccaatcggccctggctaaggagtggaac 227966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              227967 ttaagetetgcaacgetgggcaccatcggctccaccgcgttetttggcatggcgatcggc 228026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 533 etcccaagetggcaggtggcattgctgacetcggtggtgtttgtaggcatgatgtccage 592
                                                                                                                                                                                                                                                                                                                                                                                                                                                      gatgccatggagatgatcctcagcatcctggcaccacagctgcattgcgagtggagg 532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ctggtgctccgggggcctggtgggcttcgggatcggaggagttccccagtcggtga---cg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 228147 ggcgctttccgtttcatcgcaggccttggtctgggcggcttggtgccttcagttaatgcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ctgtatgccgagttccttcccatgaaagccagagctaaatgtattttgctgattgaggta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          830 ttctggggccatcgggacagtgttcgaggtcgtcctggctgttgttcgtgatgcccagcctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        593 tecaegetetggggaaatateteagaecagtaeggeaggaaaaaeagggetgaagateage
                                                                                                                                                                                                                                                                   Sequence 309400 BP; 70133 A; 86477 C; 83115 G; 69675 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                Length 309400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ggetggcgttggetgetcatectetcagetgtecegeteeteetttgeegt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          228327 gaggagtgggggctggcgttcatgttcctcatcgcgttgatcccactggttgt
                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                      Score 49; DB 22; L¢
Pred. No. 0.032;
0; Mismatches 255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAV49559 standard; cDNA to mRNA; 1662 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human liver cell clone HP01293 cDNA #2.
                                                                                                                                                                                                                                                                                                                                                      Query Match 1.9%;
Best Local Similarity 45.5%;
Matches 215; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97WO-JP04056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                07-NOV-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-OCT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22-MAY-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          228207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                   5555555555×8
```

```
AAV49550-V49599 are CDNA sequences which encode human proteins containing
                                                                                                                                                                                                                                                                                                                                                           a transmembrane domain. These proteins can be used for, e.g. research and nutrition, and may have cytokine and cell proliferation/differentiation, immune stimulating/suppressing, haematopoiesis regulating, tissue growth, activin/inhibin, chemotactic/chemokinetic, haemostatic and thrombolytic, receptor/ligand, anti-inflammatory or tumour inhibition activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1561 eggeetggggeacetgeageggeatggeaagagtgggtgeteteateacteegtteatege 1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1512 gcttgccgcgggagtgacgctacttctcca---gagaccaagggggtcgctttgccaga 1568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1092 catectgeacatggggegecaccagegggaacetetacettggatteetttaeteegete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ctctgaatttccaggtgtccttgtgactctgtggattattgaccgcctggggcgcaagaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1387 gaccatggccctgtgctttgtcatcttct...ccttctgcagcctcctgctgtttatctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1444 tgttggaagaaatgtgctcactctgttactcttca---ttgcaagagcgtttatttctgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1501 aggettteaageggeatatgtttacacacctgaggtetaceceaeggeaacgegggeeet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ccaggtgatgctggaatcctctgtgtacctgactctggcagtttacagtggctgctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1152 ggtcgaaatcccgggggccttcatagccctcatcaccattgaccgcgtgggccgcatcta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1332 tgcaatacaaatgatctgcctggtgaatgctgagctgtaccccacattcgtcaggaacct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1681 cctggctgcctcggcttctttgcccattgagaccaaaggcggaggactgcagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1662;
                                                                                                                                                                                                             e.g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1662 BP; 312 A; 486 C; 466 G; 398 T; 0 other;
                                                                                                                                                                                                          Human protein having transmembrane domain - useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 46.6; DB 19;
Pred. No. 0.0097;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches 244;
                                                                           Yamaguchi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAV49558 standard; cDNA to mRNA; 1888
                                                                                                                                                                                                                                                                                           Claim 3; Page 120-121; 205pp; English.
                                                                             Sekine S,
                           CENTRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   / Match 1.8%;
Local Similarity 47.8%;
les 232; Conservative C
(PROT-) PROTEGENE INC. (SAGA) SAGAMI CHEM RES
                                                                                                                                                                                                                                         research and nutrition
                                                                             Kobayashi M,
                                                                                                                             WPI; 1998-297932/26.
P-PSDB; AAW64538.
```

3,

1740

```
The invention relates to novel cat flea (Ctenocephalides felis) nucleic acids which are expressed in hindgut and Malpighian tubule (HMT) tissue or head and nerve cord (HMC) tissue. The invention also relates to the encoded proteins. The invention additionally encompasses expression constructs, recombinant viruses and recombinant cells comprising the nucleic acids of the invention, recombinant production of the proteins, antibodies against the proteins, amethod of identifying inhibitors of the proteins, and compositions comprising the inhibitors for the proteins and administration to an animal. The nucleic acids, and the proteins they encode may be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used to produce an HMT or HMC protein according to standard recombinant DNA methodology by inserting the nucleic acids into a host cell and culturing the cell to express the protein. The HMT and HNC nucleic acids may also be used as DNA probes in diagnostic assays (e.g., PCR) to detect and quantitate the presence of cat flea or other homologous nucleic acid sequences in samples. They may also be used to study the expression and function of the proteins and their role in metabolism. The HMT and HNC proteins may be used as antigens in the production of specific antibodies, and in assays to identify modulators (agonists and antibodies, antibodies, and in assays to identify modulators (agonists and antibodies, antibodies, and in assays to identify modulators (agonists and antibodies).
1601 gcttgccgcgggagtgacgctacttcttcca---gagaccaagggggtcgctttgccaga 1657
                                                                                                                                 ccaggigatgctggaatcctctgtgtacctgactctggcagtttacagtggctgctgcct
                                                                                                                                                                                                                                                                                                                                                                                                                                              Cat flea hindgut and Malpighian tubule (HMT) cDNA, SEQ ID NO:369.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Flea Malpighian tubule and head and nerve cord tissue derived nuacids useful for the prevention, diagnosis and treatment of flea infestations -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cat flea; hindgut and Malpighian tubule nucleic acid; HMT; flea infestation; vaccine; antiparasitic; therapeutic target;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wisnewski
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Stinchcomb DT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 26; Page 368; 964pp; English.
                                                                                                                                                                                                                                                                                                                                     BP
                                                                                                                                                                                                                                                                                                                                     AAC93874 standard; cDNA; 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-APR-2000; 2000WO-US09437.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99US-0128704.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      diagnosis; detection; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaines PJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ctenocephalides felis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2000-656323/63.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (HESK-) HESKA CORP
                                                                                                                                                                                                       gtcca 1745
                                                                                                                                                                                                                                          gacca 1662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200061621-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       09-APR-199;
                                                                                                                                                                                                                                                                                                                                                                                                            19-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19-OCT-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Brandt KS,
                                                                                                                                                                                                                                                                                                                                                                       AAC93874;
                                                                                                                                                                                                                                                                                                   RESULT 12
                                                                                                                                                                                                      1741
                                                           1621
                                                                                             1541
                                                                                                                                 1681
                                                                                                                                                                                                                                            1658
                                                                                                                                                                                                                                                                                                                      AAC93874
                                                                                                                                                                                                                                                                                                                                       a
                                                         ò
                                                                                     QQ
                                                                                                                         ò
                                                                                                                                                                 q
                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAV49550-V49599 are cDNA sequences which encode human proteins containing
                                                                          Transmembrane domain: human; nutrition; cytokine; cell proliferation; differentiation; immune system; stimulator; suppressor; regulator; heamatopolesis; activin; inhibitor; chemotactic; chemokinetic; receptor; haemostatic; thrombolytic; ligand; antl-inflammatory; tumour; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           haematopoiesis regulating, tissue growth, activin/inhibin, chemotactic/chemokinetic, haemostatic and thrombolytic, receptor/ligand, anti-inflammatory or tumour inhibition activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cagcutggcctgcgagtacctgagtgaggattacatggacttgctgtggaccacuct 1326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1181 catectgeacatgggegecaccagegggaacetetacetggattteetttaeteegetet 1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1327 ctctgagtttccaggtgtccttgtgactctgtggattattgaccgcctggggcgcaagaa 1386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aggettteaageggaatatgtttacacacctgaggtetaceccacggcaacgegggeet 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1387 gaccatggccctgtgctttgtcatcttct---ccttctgcagcctcctgctgritatctg 1443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tgttggaagaaatgtgctcactctgttactcttca---ttgcaagagcgtttatttctgg 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1421 tgcaatacaaatgatctgcctggtgaatgctgagctgtaccccacattcgtcaggaacct 1480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cggcctggggcacctgcagcggcatggcaagagtgggtgctctcatcactccgttcatcgc 1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a transmembrane domain. These proteins can be used for, e.g. research and nutrition, and may have cytokine and cell proliferation/differentiation, immune stimulating/suppressing,
                                                                        proliferation;
                                                                                                                                                                                                                                            /*tag= a
/product= "transmembrane domain containing protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1888;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human protein having transmembrane domain - useful for, e.g. research and nutrition
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1888 BP; 365 A; 545 C; 520 G; 458 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 1.8%; Score 46.6; DB 19; Best Local Similarity 47.8%; Pred. No. 0.01; Matches 232; Conservative 0; Mismatches 244;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yamaguchi T;
                                         Human liver cell clone HP01293 cDNA #1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 4; Page 141-143; 205pp; English.
                                                                                                                                                                                                       Location/Qualifiers
90..1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sekine S,
                                                                                                                                                                                                                                                                                                                                                                                                                                              (PROT-) PROTEGENE INC.
(SAGA ) SAGAMI CHEM RES CENTRE.
                                                                                                                                                                                                                                                                                                                                                                                                          96JP-0301429.
                                                                                                                                                                                                                                                                                                                                                                       97WO-JP04056.
     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kato S, Kobayashi M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1998-297932/26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB; AAW64538
                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                   WO9821328-A2
                                                                                                                                                                                                                                                                                                                                                                       07-NOV-1997;
                                                                                                                                                                                                                                                                                                                                                                                                          13-NOV-1996;
     21-0CT-1998
                                                                                                                                                                                                                                                                                                                                     22-MAY-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1561
     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
```

nucleic

ż

```
177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   297
                                                                                                                                                                                                                                                                                                                                           391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAC95402/
   셤
                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
0
anti-HMT/HNC protein antibodies and antagonists may also be used to downregulate protein expression and activity. The antibodies may also be used as diagnostic agents for detecting the presence of flea polypeptides in samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The present sequence represents a cat flea HMT cDNA of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to novel cat flea (Ctenocephalides felis) nucleic acids which are expressed in hindgut and Malpighian tubule (HMT) tissue
                                                                                                                                        101 gtttgaagatgcgttggcactcacaggttttggaaaattcaattaccttctlctggtcgt 160
                                                                                                                                                                                                   gagiggaigcgialtagiaigtgitttgaiggaaactctiggaaigagitttgicgitcc 220
                                                                                                                                                                                                                                   22] ttcagcacaatgtgatctggaatlaacaacaaaaaaggaatattaagcgctatayc 280
                                                                                                                                                                                                                                                                              Flea Malpighian tubule and head and nerve cord tissue derived nucleic acids useful for the prevention, diagnosis and treatment of flea infestations \cdot
                                                                                                                    Gaps
                                                                                                                                                                                                                       511 acagetgeattgegagtggaggeteecaagetggeaggtggeattgetgaceteggtggt
                                                                                                                                                                                cactggcttggcttggatggctgatgccatggagatgatgatcctcagcatcctggcacc
                                                                                                                                                                                                                                                                571 ctttgtaggcatgatgtccagctccacgctctggggaaatatctcagaccagtacggcag
                                                                                                                   ;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Cat flea HMT synaptic vesicle 2B-like cDNA ORF, SEQ ID NO:1904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cat flea; hindgut and Malpighian tubule nucleic acid; HMT;
flea infestation; vaccine; antiparasitic; therapeutic target;
                                                                                              DB 21; Length 549;
                                                                                                                  Indels
                                                               Sequence 549 BP; 162 A; 83 C; 122 G; 182 T; 0 other;
                                                                                              Score 46.4; DB 21;
Pred. No. 0.0062;
0; Mismatches 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wisnewski
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Stinchcomb DT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 1; Page 926-927; 964pp; English.
                                                                                                                                                                                                                                                                                                                                                                                AAC95401 standard; cDNA; 1590 BP.
                                                                                              1.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-APR-2000; 2000WO-US09437.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0128704
                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                         gaaaacagggctgaag 646
                                                                                              Query Match 1.8°
Best Local Similarity 48.8°
Matches 125; Conservative
                                                                                                                                                                                                                                                                                                                             341 gcggaaagtgattatg 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       diagnosis; detection; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      РЈ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ctenocephalides felis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000-656323/63.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaines
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-656323,
P-PSDB; AAB29626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MO200061621-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                         19-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Brandt KS,
                                                                                                                                                                                                                                                                                                                                                                                                     AAC95401;
                                                                                                                                                                                                                                                                                                          631
                                                                                                                                       391
                                                                                                                                                                                                   161
                                                                                                                                                                                                                                                                                                                                                                       AAC95401
                                                                                                                                                                                                                                                                                                                                                              RESULT
 g
                                                                                                                                                                                                 a
                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                          ô
                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                               ò
                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                ò
```

```
cor head and nerve cord (HNC) tissue. The invention also relates to the encoded proteins. The invention additionally encompasses expression constructs, recombinant viruses and recombinant cells comprising the nucleic acids of the invention, recombinant production of the proteins, antibodies against the proteins, and compositions comprising the inhibitors for the proteins, and compositions comprising the inhibitors for administration to an animal. The nucleic acids, and the proteins they encode may be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used to produce an HMT or HNC protein according to standard recombinant or used to produce an HMT or HNC protein according to standard recombinant DNA methodology by inserting the nucleic acids into a host cell and quantitate the presence of cat flea or other homologous nucleic acids and quantitate the presence of at flea or other homologous nucleic acids sequences in samples. They may also be used to study the expression and function of the proteins and their role in metabolism. The HMT and HNC protein say be used as antigens in the production of specific antigonists) of HMT and/or HNC protein antibodies and antagonists may also be used as antigonise and antagonists may also be used contragonists) of HMT and/or HNC protein antibodies and antagonists may also be used to downrequiate protein antibodies and antagonists may also be used to downrequiate protein antibodies and antagonists may also be used to downrequiate protein antibodies and antagonist may also be used to downrequiate protein antibodies and antagonists may also be used to downrequiate protein antibodies and antagonist may also be used to downrequiate protein antibodies and antagonists may also be used to downrequiate protein antibodies and antagonists may also be used to downrequiate protein expression and activity. The antibodies may also be used to downrequiate protein and activity the antibodies and publication in sam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117 gagtggatgcgtattagtatgtgttttgatggaaactcttggaatgagttttgtcgttcc 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          511 acagctgcattgcgagtggaggctcccaagctggcaggtggcattgctgacctcggtggt 570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      571 ctttgtaggcatgatgtccagctccacgctctggggaaatatctcagaccagtacggcag 630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cat flea HMT synaptic vesicle 2B-like cDNA complement, SEQ ID NO:1905.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ttcagcacaatgtgatctggaattaacaacaaaaaaaaggaatattaagcgctatagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              451 cactggcttggcttggatggctgatgccatggagatgatgatcctcagcatcctggcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 21; Length 1590;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cat flea; hindgut and Malpighian tubule nucleic acid; HMT; flea infestation; vaccine; antiparasitic; therapeutic target;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1590 BP; 482 A; 252 C; 349 G; 507 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 1.8%; Score 46.4; DB 21; Best Local Similarity 48.8%; Pred. No. 0.011; Matches 125; Conservative 0; Mismatches 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAC95402 standard; cDNA; 1590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gaaaacagggctgaag 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gcggaaagtgattatg 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            diagnosis; detection; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ctenocephalides felis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200061621-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAC95402;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
```

AAC95399

```
The invention relates to novel cat flea (Ctenocephalides felis) nucleic acids which are expressed in hindgut and Malpighian tubule (HMT) tissue or head and nerve cord (HMC) tissue. The invention also relates to the encoded proteins. The invention additionally encompasses expression constructs, recombinant viruses and recombinant cells comprising the nucleic acids of the invention, recombinant production of the proteins, antibodies against the proteins, a method of identifying inhibitors of the proteins, and compositions comprising the inhibitors for the proteins, and compositions comprising the inhibitors of administration to an animal. The nucleic acids, and the proteins they cancode may be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used to produce an HMT or HNC protein according to standard recombinant culturing the cell to express the protein. The HMT and HNC nucleic acids may also be used as DNA probes in diagnostic assays (e.g., PCR) to detect and quantitate the presence of cat flea or other homology us nucleic acid function of the proteins and their role in metabolism. The HMT and HNC contains may be used as antigens in the production of specific antibodies. And in assays the indentity of antibodies and in assays the production of specific antibodies.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 antibodies, and in assays to identify modulators (agonists and antagonists) of HMT and/or HNC protein expression and activity. The anti-HMT/HNC protein antibodies and antagonists may also be used to downregulate protein expression and activity. The antibodies may also be used as diagnostic agents for detecting the presence of flea polypeptides in samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The present sequence represents a cat flea HMT cDNA of the invention.
                                                                                                                                                                                                                                                                                      Flea Malpighian tubule and head and nerve cord tissue derived nucleic acids useful for the prevention, diagnosis and treatment of flea
                                                                                                                                                            Wisnewski N;
                                                                                                                                                            Stinchcomb DT,
                                                                                                                                                                                                                                                                                                                                                                                          Claim 1; Page 927; 964pp; English.
07-APR-2000; 2000WO-US09437.
                                                   99US-012B704.
                                                                                                                                                            Gaines PJ,
                                                                                                                                                                                                             WPI; 2000-656323/63
                                                                                                      (HESK-) HESKA CORP.
                                                                                                                                                                                                                                        P-PSDB; AAB29626
                                                                                                                                                                                                                                                                                                                                            infestations -
                                                   09-APR-1999;
                                                                                                                                                            KS,
```

Sequence 1590 BP; 507 A; 349 C; 252 G; 482 T; 0 other;

```
.;
0
                                                                                        1534 GITTGAAGATGCGTTGGCACTCACAGGTTTTGGAAAATTCAATTACCTTCTTCTGGTCGT 1475
                                                                                                                                                 1474 GAGTGGATGCGTATTAGTGTTTTGATGAAACTCTTGGAATGAGTTTTGTCGTTCC 1415
                                                                                                                                                                                                                      acagetgeattgegagtggaggeteceaagetggeaggtggeattgetgaceteggtggt 570
                                    Gaps
                                                                                                                                                                                                                                                    cttgtaggcatgatgtccagctccacgctctggggaaatatctcagaccagtacggcag
                                                                                                                           451 cactggcttggcttggatggctgatgccatggagatgatgatcctcagcatcctggcacc
                                 ;
1.8%; Score 46.4; DB 21; Length 1590;
8.8%; Pred. No. 0.011;
ve 0; Mismatches 131; Indels 0;
                48.88;
                                                                                                                                                                                                                                                                                                                                                1294 GCGGAAAGTGATTATG 1279
                                                                                                                                                                                                                                                                                                                       gaaaacagggctgaag 646
               Best Local Similarity 48.8
Matches 125; Conservative
 Query Match
                                                                                          qq
                                                             ò
                                                                                                                          οy
                                                                                                                                                      q
                                                                                                                                                                                                                    g
                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                  ò
```

RESULT

ö

```
The invention relates to novel cat flee (Ctenocephalides felis) nucleic acids which are expressed in hindgut and Malpighian tubule (HMT) tissue or head and nerve cord (HMC) tissue. The invention also relates to the encoded proteins. The invention additionally encompasses expression constructs, recombinant viruses and recombinant cells comprising the nucleic acids of the invention, recombinant cells comprising the constructs, and compositions comprising the inhibitors of the proteins, and compositions comprising the inhibitors of the proteins and animal. The nucleic acids, and the proteins they canced may be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be considered with flea infestations. For example, the nucleic acids may be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used as DNA probes in diagnostic assays (e.g., PCR) to detect and quantitate the presence of cat flea or other homologous nucleic acid and quantitate the presence of cat flea or other homologous nucleic acid sequences in samples. They may also be used to study the expression and squencian may be used as antigens in the production of specific cantibodies, and in assays to identify modulators (agonists and antigens in the production of specific cantibodies, and in assays to identify modulators (agonists and contact antigonists) of HMT and/Or HVC protein expression and antigons antigens in the production of specific cantigonists) of HMT and/Or HVC protein expression and antigonists of HMT and/Or HVC protein expression and antigons and prevention expression and antigons in the production of specific cantigonists) of HMT and/Or HVC protein expression and antigons and prevention expression and antigons and prevention expression and antigons and an assays to identify modulators (agonists and an assays to identify and antigonists) of the proteins and an assays to identify and antigon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        anti-HMT/HNC protein antibodies and antagonists may also be used to downregulate protein expression and activity. The antibodies may also be used as diagnostic agents for detecting the presence of flea polypeptides in samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Flea Malpighian tubule and head and nerve cord tissue derived nucleic acids useful for the prevention, diagnosis and treatment of flea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        present sequence represents a cat flea HMT cDNA of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1.8%; Score 46.4; DB 21; Length 1875; 48.8%; Pred. No. 0.012;
                                                                                                                                                                                                        Cat flea; hindgut and Malpighian tubule nucleic acid; HMT; flea infestation; vaccine; antiparasitic; therapeutic target; diagnosis; detection; ss.
                                                                                                                                                        Cat flea HMT synaptic vesicle 2B-like cDNA, SEQ ID NO:1901.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1875 BP; 603 A; 283 C; 388 G; 601 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wisnewski N;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stinchcomb DT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1; Page 920-923; 964pp; English.
  BP.
AAC95399 standard; cDNA; 1875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  07-APR-2000; 2000WO-US09437.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0128704
                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaines PJ,
                                                                                                                                                                                                                                                                                                                Ctenocephalides felis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-656323/63.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P-PSDB; AAB29626
                                                                                                     19-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .nfestations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                  19-OCT-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Brandt KS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Sim
Matches 125;
                                                        AAC95399;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          αq
```

Search completed: March 8, 2002, 02:49:15 Job time: 10963 sec

. .

```
Sequence 5, Application US/08501572

Patent No. 6063623

GENERAL INFORMATION:
APPLICANT: Grundeman, Dirk
APPLICANT: Grundeman, Dirk
TITLE OF INVENTION: Transport protein Which Effects The
TITLE OF INVENTION: Transport Of Cationic Xenobiotics and/or Pharmaceuticals,
TITLE OF INVENTION: DNA Sequences Encoding It And Their Use.
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                Appl
Appli
Appli
                                                                                                                                                                                      , Appl
Appli
                                                                                                                                      Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1267 cagcctggcctgcgagtacctgagtgaggaggattacatggacttgctgtggaccaccct 1326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                Sednence
Sednence
Sednence
Sednence
Sednence
Sednence
Sednence
Sednence
Sednence
Sednence
Sednence
Sednence
Sednence
                                Sequence
Sequence
                                                                   Sequence
 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 2.1%; Score 53.2; DB 3; Length 1885; Best Local Similarity 47.3%; Pred. No. 1e-05; Matches 228; Conservative 0; Mismatches 248; Indels 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dunner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: Finnegan, Henderson, Farabow, Garrett & STREET: 1300 I Street, N.W., Suite 700 CITY: Mashington STATE: D.C. COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ALIGNAL, COURTED TO MANUAL TOOLOGY, KIMDERIN M REGISTRATION NUMBER: 35,391
REFERENCE/DOCKET NUMBER: 02481.1453-00000
TELEPHONE: (202)408-4000
TELEPHONE: (202)408-4000
INFORMATION FOR SEQ ID NO: 5: SEQUENCE CHARACTERISTICS:
LENGTH: 1885 base pairs
US-08-758-314-2
US-09-440-325A-2
US-09-440-325A-1
US-09-007-005-17
US-09-276-531-46
US-08-061-465-3
US-08-061-465-3
US-08-061-465-1
US-08-061-465-1
US-08-08-011-12
US-08-08-01-12
US-08-08-08-12
US-08-08-08-12
US-08-08-08-12
US-08-08-08-12
US-08-08-08-112
US-08-08-08-112
US-08-08-08-08-112
US-08-08-08-08-112
US-08-08-08-08-112
US-08-08-08-08-112
US-08-08-08-08-08-112
                                                                                                                                                                                                                                                                        PCT-US93-07370-21
                                                                                                                                                                                                                                                                                        US-09-063-950-3
                                                                                                                                                                                                                                                                                                                                            ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 20005-3315
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TOPOLOGY: linear
; MOLECULE TYPE: DNA (genomic)
US-08-501-572-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: Toohey, Kimberlin
                                                                                                                                                                                        803
1610
1610
1610
1610
2019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                single
2496
2082
2102
2102
289
2484
2484
2515
6828
803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20005-3315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                RESULT 1
US-08-501-572-5
 228
330
331
332
332
333
34
44
44
44
45
45
45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δλ
                                                                                                         00000000000
                                                                                                                     ; Search time 137.14 Seconds (without alignments) 4230.980 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           , Appl
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Appl
Appli
Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Appl
Appl
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                           1 cccacgcgtccgggctttgt.....tgaggactgagngccaagty 2562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 5, Al
Sequence 5, Al
Sequence 14, 1
Sequence 6, Al
Sequence 6, Al
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence 6, Ag
Sequence 6, Ag
Sequence 4, Ag
Sequence 1, Ag
Sequence 2, Ag
Sequence 2, Ag
Sequence 3, Ag
Sequence 3, Ag
Sequence 1, Ag
Sequence 1, Ag
Sequence 2, Ag
Sequen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
/cgn2_6/ptodata/2/ina/5B_COMB.seq:*
/cgn2_6/ptodata/2/ina/6A_COMB.seq:*
/cgn2_6/ptodata/2/ina/6B_COMB.seq:*
/cgn2_6/ptodata/2/ina/PcTUS_COMB.seq:*
/cgn2_6/ptodata/2/ina/PcTUS_COMB.seq:*
                       GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-501-572-5

US-09-040-444-5

US-08-323-463-14

US-08-501-572-6

US-09-040-444-6

US-08-501-572-4

US-09-130-114-2

US-09-130-114-2

US-09-130-114-2

US-08-964-127-3

US-08-964-127-3

US-08-964-127-3

US-08-964-127-3

US-08-728-3234-1

US-08-728-3234-1

US-08-757-669A-20

US-08-757-669B-2

US-08-481-238-2

US-08-81-238-2

                                                                                                                                                                                                                                                                                                                                                hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                            351203 seqs, 113238999 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Listing first 45 summaries
                                                                                           nucleic search, using sw model
                                                                                                                         March 7, 2002, 23:45:17
                                                                                                                                                                                                                                                               IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Issued_Patents_NA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0% Maximum Match 100%
                                                                                                                                                                                                                                                                                                                                                                                length: 0
length: 2000000000
                                                                                                                                                                                             US-09-911-667A-1
2562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1885
1885
7218
1896
1896
7218
1882
1882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1931
1490
                                                                                                                                                                                                                                                                                                                                                 Total number of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sed
                                                                                                                                                                                                               Perfect score:
Sequence:
                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB
Maximum DB
                                                                                            OM nucleic
                                                                                                                                                                                                                                                                                                                   Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Database
                                                                                                                             Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           U
```

```
gaccatggccctgtgctttgtcatcttctccttctgcagcctcctgctgtttatctgtgt 1446
                                                                                                                                                                                                                                                                                                                                                                                           1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1504 ctttcaagcggcatatgtttacacacctgaggtctaccccacggcaacgcgggccctcgg 1563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cctgggcacctgcagcggcatggcaagagtggtgctctcatcactccgttcatcgccca 1623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1684 ggctgccctggcrtcctgcttttgcccattgagaccaaaggcggaggactgcaggagtc 1743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gals
                                                                                                                                                                                                                                                                                  1327 ctctgagtttccaggtgtccttgtgactctgtggattattgaccgcctggggggaagaa
                                                                                                                                                                                                                                                                                                                                                                                                                               tggaagaaatgtgctcactctgttactcttca---ttgcaagagcgtttatttctggagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ggtgatgctggaatcctctgtgtacctgactctggcagtttacagtggctgctgctcct
                                                                                                                                                                                 9
                                                                                                                                              Length 1885;
                                                                                                                                                                                 Indels
                                                                                                                                             2; DB 3; I
1e-05;
thes 248;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.25
CURRENT APPLICATION DATA: US/08/232,463
                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: DORNER, F.
APPLICANT: SCHEIFLINGER, F.
APPLICANT: FALKNER, F. G.
TITLE OF INVENTION: RECOMBINANT FOWLPOX NUMBER OF SEQUENCES: 52
CORRESPONDENCE ADDRESS:
                                                                                                                                           Score 53.2;
Pred. No. 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 14, Application US/08232463
Patent No. 5670367
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: Foley & Lardner
STREET: 1800 Diagonal Road,
CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IBM PC compatible
                                                                       ) MOLECULE TYPE: DNA (genomic) US-09-040-444-5
                                                                                                                                           Query Match 2.1%;
Best Local Similarity 47.3%;
Matches 228; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Floppy disk
     1885 base pairs
                     TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22313-0299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ||
| CA 1642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1744 ca 1745
                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 3
US-08-232-463-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STATE:
                                                                                                                                                                                                                                                                                                                                                        1387
                                                                                                                                                                                                                                                                                                                                                                                                                             1447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1641
                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                       οp
                                                                                                                                                                                                                                                                                                                                                                                                                            δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 5, Application US/09040444

Patent No. 6063766

GENERAL INFORMATION:
APPLICANT: Cordenan, Dirk
APPLICANT: Groudeman, Dirk
APPLICANT: Groudeman, Dirk
APPLICANT: Groudeman, Dirk
APPLICANT: Groudeman, Dirk
TITLE OF INVENTION: Transport protein Which Effects The
TITLE OF INVENTION: Transport Of Cationic Xenobiotics and\or Pharmaceuticals,
TITLE OF INVENTION: DNA Sequences Encoding It And Their Use.
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
1387 gaccatggccctgtgctttgtcatcttctccttctgcagcctcctgctgtttatctgtgt 1446
                                                     1327 ctctgagtttccaggtgtccttgtgactctgtggattattgaccgcctggggcgcaagaa 1386
                                                                                    1224 GGTCGAAATCCCGGGGGCCTTCATAGCCCTCATCACCATTGACCGCGTGGGCCGCATCTA 1283
                                                                                                                                                         1404 AATACAAATGATCTGCCTGGTGAATGCTGAGCTGTACCCCACATTCGTCAGGAACCTCAG 1463
                                                                                                                                                                                                                                                                                                                                1564 cctgggcacctgcagcggcatggcaagagtgggtgctctcatcactccgttcatcgccca 1623
                                                                                                                                                                                                                                                                                                                                                        1624 ggtgatgctggaatcctctgtgtacctgactctggcagtttacagtggctgctgcctcct 1683
                                                                                                                                                                                                                                                                                                                                                                                                                               1684 ggctwcctggcctctgcttttgccattgagaccaaaggcggaggactgcaggagtc 1743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1584 TGCCCCGGGAGTGACGCTACTTCTTCC---AGAGACCAAGGGGGACGCTTTGCCAGAGAC 1640
                                                                                                                                                                                          1447 tggaagaaatgtgctcactctgttactcttca---ttgcaagagcgtttatttctggagg
                                                                                                                                                                                                                                                                1504 ctttcaagcggcatatgtttacacactgaggtctaccccacggcaacgcgggccctcgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P. STREET: 1300 I Street, N.W., Suite 700 CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Patentin Release #1.0, Version #1.30 CURRINT APPLICATION DATE: US/09/040,444 FILING DATE: March 18, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2481.1453-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: O'Connor, Steven P
REGISTRATION NUMBER: 41,225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 24 TELECOMMUNICATION INFORMATION;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (202)408-4000
TELEFAX: (202)408-4400
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20005-3315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1744 ca 1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CA 1642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE: D
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-040-444-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1641
                  οp
                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                  g
                                                                                                                     οχ
                                                                                                                                                       g
                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
```

```
APPLICANT: Koepsell, Hermann
APPLICANT: Grundeman, Dirk
APPLICANT: Grundeman, Dirk
APPLICANT: Groboulev, Valentin
TITLE OF INVENTION: Transport protein Which Effects The
TITLE OF INVENTION: Transport of Catlonic Xenobiotics and\or Pharmaceuticals,
TITLE OF INVENTION: DN Sequences Encoding It And Their Use.
CORRESPONDENCES: 6
CORRESPONDENCES: 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1290 gtgaggaggattacatggacttgctgtggaccaccctctctgagtttccaggtgtccttg 1349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1322 TGATCATCCTCATTATCGACCGCATCGGACGCCGTTACCCTTGGGCTGCATCAAATATGG 1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1382 TTGCAGGGGCAGCCTGTCTGGCCTCAGTTTTTATACCTGGTGATCTACAATGGCTAAAAA 1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1464 etetgitaetetteattgeaagagegittaittetggaggetticaageggeatatgiti 1523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1524 acacacetgaggtetaceecaeggeaaegegggeeetegggeetggggeaeetgeageggea 1583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1584 tggcaagagtgggtgctctcatcactccgttcatcgcccaggtgatgctggaatcctctg 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1350 tgactctgtggattattgaccgcctggggcgcaagaagaccatggc----cctgtgctt 1404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1442 TTATTATCTCATGCTTGGGAAGAATGGGGATCACAATGGCCTATGAGATAGTCTGCCTGG 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1262 GIGACAATATCTACCTGGATTTCTTCTACTCTGCCCTGGTTGAATTCCCAGCTGCCTTCA 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1405 tgtcatcttctccttctgcagcctcctgctgtttatct-gtgtttgaagaaatgtgctca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1896;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 45; DB 3; Length 189
Pred. No. 0.0028;
0; Mismatches 205; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1644 tgtacctgactctggcagtttacagtggctgctgctcctggctg 1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURENT APPLICATION DATA:
APPLICATION NUMBER: US/08/501,572
                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
NAME: Toohey, Kimberlin M
REGISTRATION NUMBER: 35,391
REFERENCE/DOCKET NUMBER: 02481.1453-00000
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)408-4000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; Sequence 6, Application US/09040444; Patent No. 6063766; GENERAL INFORMATION:
                                                   COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 1.8%;
Best Local Similarity 47.9%;
Matches 194; Conservative
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 1896 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: (202)408-4400
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   single
                                                                                                                                                                                                                                                    FILING DATE:
CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-040-444-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-501-572-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Koepsell, Hermann
APPLICANT: Grundeman, Dirk
APPLICANT: Groboulev, Valentin
TITLE OF INVENTION: Transport protein Which Effects The
TITLE OF INVENTION: Transport of Cationic Xenobiotics and\or Pharmaceuticals,
TITLE OF INVENTION: DNA Sequences Encoding It And Their Use.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gagegittaitteiggaggettteaageggeataigttiacaecacetgaggietaececa 1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      eggeaacgegggeeeteggeetgggeacetgeageggeatggeaagagtgggtgetetea 1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1365 ttgaccgcctggggcgcaagaagaccatggccctgtgctttgtcatcttctccttctgca 1424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           teacteegtteategeceaggtgatgetggaateetetgtgtaeetgaetetggeagttt 1664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1425 gcctcctgctgtttatctgtgtttggaagaaatgtgctcactctgttactcttcatlgcaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        / Match 1.8%; Score 45.2; DB 1; Length 7218; Local Similarity 4.0%; Pred. No. 0.0053; nes 14; Conservative 194; Mismatches 142; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1665 acagtggctgcctcctggctgcctggcttcttgcccatt 1714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., and Their strucks:
..., a
                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29,768
RECISTRATION NUMBER: 30472/114 IMMU
TELEPHONE: (703)835-9300
TELEFAX: (703)835-4109
                                                                                                                                            EP 91 114 300.6
       CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/935,313
FILING DATE:
APPLICATION NUMBER: EP 91 114 300.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; Sequence 6, Application US/08501572
; Patent No. 6063623
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7218 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEX: 899149
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pTZgpt-F1s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IMMEDIATE SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-232-463-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-501-572-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
```

q ŏ a

ŏ

Q ò g ò

ò

q

δ qq

```
446 gttctcactggcttggcttggatggctgatgccatggagatgatgatgctcagcatcctg
TITLE OF INVENTION: RECOMBINANT FOWLPOX VIRUS NUMBER OF SEQUENCES: 52 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703)836-9300
                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/935,313
FILING DATE:
APPLICATION NUMBER: EP 91 114 300.
FILING DATE: 26-AUG-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                          COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-DOS
                                                       E: Foley & Lardner
1800 Diagonal Road,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29,768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14:
                                                                                                                               COUNTRY: USA
ZIP: 22313-0299
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7218 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (703)683-4109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEX: 899149
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: BENT, Stephen A. REGISTRATION NUMBER: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nucleic acid
EDNESS: single
                                                                                                                                                                                                                                                                                                                           CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; CLONE: pTZgpt-F1s
US-08-232-463-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1051 GACCTGCAGC 1042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            506 qcaccacaqc 515
                                                                                           Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IMMEDIATE SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE:
                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH:
                                                                             STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1290 gtgaggaggattacatggacttgctgtggaccaccctctctgagtttccaggtgtccttg 1349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1262 GTGACAATATCTACTGGATTTCTTCTACTCTGCCTGGTTGAATTCCCAGCTGCTTCA 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1350 tgactctgtggattattgaccgcctggggcgcaagaagaccatggc----cctgtgctt 1404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1322 TGATCATCCTCATTATCGACCGCATCGGACGCCGTTACCCTTGGGCTGCATCAAATATGG 1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1464 ctctgttactcttcattgcaagagcgtttatttctggaggctttcaagcggcatatgttt 1523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1442 TTATTATCTCATGCTTGGGAAGAATGGGGATCACAATGGCCTATGAGATAGFCTGCCTGG 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1524 acacacctgaggtctaccccacggcaacgcgggccctcggcctgggcacctgcagcggca 1583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1502 TCAATGCTGAGCTGTACCCCACATTCATTAGGAATCTTGGCGTCCACATCTGTTCCTCAA 1561
 ADDRESSEE: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P. STREET: 1300 I Street, N.W., Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.8%; Score 45; DB 3; Length 1896; 47.9%; Pred. No. 0.0028; tive 0; Mismatches 205; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1644 tgtacctgactctggcagtttacagtggctgctgcctcctggctg 1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
NAME: O'CONDOT, Steven P
REGISTRATION NUMBER: 41,225
REFERENCE/DOCKET NUMBER: 2481.1453-01
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)408-400
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 1896 base pairs
                                                                                                                                                                                                                        APPLICATION NUMBER: US/09/040,444
FILING DATE: March 18, 1998
CLASSIFICATION:
                                                                                         ZIP: 20005-3315
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-232-463-14/c
Sequence 14, Application US/08232463
Patent No. 5670367
GENERAL INFORMATION:
APPLICANT: DORNER, F.
APPLICANT: SCHETFLINGER, F.
APPLICANT: FALKNER, F. G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; MOLECULE TYPE: DNA (genomic) US-09-040-444-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 194; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: nucleic acid
STRANDEDNESS: single
               STREET: 1300.
CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
                                                                             USA
                                                           STATE: D
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

```
326 giggagciggaigaiggggcagcigigcccaaggagiiigccaaicccaccgaigaiaci 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    146 aagggccatgagaagggctcatcctggcgcagcgggacatggaggaggacttattccag 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                206 ctaaggcagctgccggttgtgaaattccgtcgcacaggcgagagtgcaaggtcagaggac 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 266 gacacggcttcaggagagcatgaagtccagattgaaggggtccacgtgggcctagaggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         386 ttcatggtggaagatgcagtggaagccattggctttggaaaatttcagtggaagctgtct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 1.6%; Score 42; DB 1; Length 7218; Best Local Similarity 4.1%; Pred. No. 0.048; Matches 15; Conservative 200; Mismatches 155; Indels
```

ö

S

```
TITLE OF INVENTION: Transport protein Which Effects The TITLE OF INVENTION: Transport Of Cationic Xenobiotics and\or Pharmaceuticals, TITLE OF INVENTION: DNA Sequences Encoding It And Their Use. NUMBER OF SEQUENCES: 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1301 tacatggacttgctgtggaccaccctctctgagtttccaggtgtccttgtgactctgtgg 1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1166 TACCTGGACTICTTTTATTCTTCTGGTGGAATTCCCCGCGGCCTTCATCATCTGGTC 1225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1226 ACCATTGACCGCATTGCCGCATCACCAATAGCGGCCTCGAATCTGGTGACGGGGGCA 1285
                                                                            1466 GGTGGGATCTTCACCCCCTTCATGGTGTTCAGGCTGATGGAAGTTTGGCAAGCCCTGCCC 1525
                                              1655 etggcagtttacagtggctgctgctcctggctgccctggctcctgctttttgcccatt 1714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1361 attattgaccgcctggggcgcaagaagaccat---ggccctgtgctttgtcatcttctcc 1417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ttca: tgcaagagcgtttatttctggaggctttcaagcggcatatgtttacacacctgag 1534
                                                                                                                                                                             1583 GAGACCAAGGGTGTGGCTTTGCTTTTGAAGAAGCAGAGAACCTGGGGAGG 1639
                                                                                                                                               1715 gagaccaaaggcggaggactgcaggagtccagccaccgggagtggggccaggagtg 1771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
ADDRESSEE: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.
STREET: 1300 I Street, N.W., Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1882;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/040,444
FILING DATE: March 18, 1998
CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: O'CONNOY, Steven PREFERENCE/DOCKET NUMBER: 2481.1453-01
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches 244;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1.5%; Score 38.6; DB 3;
47.0%; Pred. No. 0.22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                             Sequence 4, Application US/09040444
Patent No. 6063766
                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Koepsell, Hermann
APPLICANT: Grundeman, Dirk
APPLICANT: Grundeman, Valentin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; MOLECULE TYPE: DNA (genomic) US-09-040-444-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (202)408-4000
TELEFAX: (202)408-4400
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIP: 20005-3315
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 1882 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 1.5'
Best Local Similarity 47.0'
Matches 224; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Washington
STATE: D.C.
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                              US-09-040-444-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1475
                                                                                                 1526
                                                                                                                                               δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                   ò
                                                                                                                                                                                                                                                                         Pharmaceuticals,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1286 GCCTGCCTCCTCATGATCTTTATCCGCATGAGCTGCACTGGTTGAACGTTACCCTCGCC 1345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1301 tacatggacttgctgtggaccaccctcttgagtttccaggtgtccttgtgactctgtgg 1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1166 TACCTGGACTTCTTTTATTCTTCTGGTGGAATTCCCCGCGGCCTTCATCATCTGGTC 1225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1226 ACCATTGACCGCATTGGCCGCATCTACCCAATAGCGGCCTCGAATCTGGTGACGGGGGCA 1285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1475 ttcattgcaagagcgtttatttctggaggctttcaagcggcatatgtttacacacctgag 1534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1346 TGTCTTGGCCGTATGGGGGCCCACCATTGTGCTGCAGATGGTCTGCCTGGTGAACGCTGAG 1405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gtctaccccacggcaacgcgggccctcggcctgggcacctgcagcggcatggcaagagtg 1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1406 CTGTACCCTACATCATCAGGAATCTTGGGATGATGGATTGCTCTGCCCTGTGTGACCTG 1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ggtgeteteateactecgtteategeeeaggtgatgetggaateetetgtgtgtaeetgaet 1654
|||| || || ||| || || ||| |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             attattgaccgcctggggggggaagaagaccat---ggccctgtgctttgtcatcttctcc 1417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1418 ttctgcagcctcctgctgtttatctgtgttggaagaaatgtgctcactctgttact---c 1474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6
                                                                                                                                                                                                                                                TITLE OF INVENTION: Transport protein Which Effects The TITLE OF INVENTION: Transport Of Cationic Xenobiotics and/or TITLE OF INVENTION: DNA Sequences Encoding It And Their Use.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1882;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 38.6; DB 3; Length 1:
Pred. No. 0.22;
0; Mismatches 244; Indels
                                                                                                                                                                                                                                                                                                                                                                   E: Finnegan, Henderson, Farabow, Garrett & Dunner
1300 I Street, N.W., Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 20005-3315
ZIP: 20005-3315
MEDIUM TYRER READABLE FORM:
COMPUTER: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           02481.1453-00000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/08/501,572
                                                                                                 Sequence 4, Application US/08501572 Patent No. 6063623 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 424
ATORNEY/AGENT INFORMATION:
NAME: TOODBY, Kimberlin M
REGISTRATION NUMBER: 35,391
REFERENCE/DOCKET NUMBER: 0248
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)408-4400
TELEPHONE: (202)408-4400
                                                                                                                                                                        APPLICANT: Koepsell, Hermann
APPLICANT: Grundeman, Dirk
APPLICANT: Gorboulev, Valentin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1.58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 1882 base pairs TYPE: nucleic acid STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 47.0
Matches 224; Conservative
                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
ADDRESSEE: Finnegan, 1
                                                                                                                                                                                                                                                                                                                                                                                                                      Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-501-572-4
                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                               US-08-501-57.2-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            рp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
```

3;

.; 0

```
STATE:
                                                                                                                                                                                TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db 37483 ggttggacggttcgccggcatcgtctgcgaatggcgttgacqgtgaggcggacgccatga 37542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Db 37543 tetgggaegeggtegagegtgaggaeteggtegetgtageegaggagttggggat gaeg 37602
                                                                                               1406 creraccracarrearcascaarcrrescarcarscarrecrerecererearcas 1465
                                                                                                                                          ggtgeteteateacteegtteategeeeaggtgatgetggaateetetgtgtaeetgaet 1654
                                                                                                                                                                 1466 GGTGGGATCTTCACCCCTTCATGGTTTCAGGCTGATGGAAGTTTGCCAAGCCTGCCC 1525
                                                                                                                                                                                                                         ctggcagtttacagtggctgctgctcctggctgccttggcctcctgctttttgcccatt 1714
                                                                                                                                                                                                                                                               1526 CT---CATTITGTTTGGGGTTTTGGGCCTGACTGCTGGGGCCATGACTCTTCTTCTCCCA 1582
1346 IGTCTTGGCCGTATGGGGGCCACTATGTGCTGCAGATGGTCTGCCTGGTGAACGCTGAG 1405
                                                             1535 gictaccccacggcaacgcgggcccicggccigggcaccigcagcggcaiggcaagagig 1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     255 ggtcagaggacgacacggcttcaggaggagagcatgaagtccagattgaaggggtccacgtgg 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1583 GAGACCAAGGGTGTGGCTTTGCCTGAGACTATGAAGAAGCAGAGAACCTGGGGAGG 1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rell No. 0221020:
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Betlach, Mary C.
APPLICANT: Shah, Sanjay Krishnakant
APPLICANT: Tang, Li
TITLE OF INVENTION: RECOMBINANT OLEANDOLIDE POLYKETIDE SYNTHASE
FILE REFERENCE: 30062-20029,00
CURRENT TAING DATE: 1999-10-28
EARLIER APPLICATION NUMBER: 60/120,254
EARLIER PELLING DATE: 1999-02-16
EARLIER FILING DATE: 1999-10-29
SEALLER PELLING DATE: 1999-10-29
NUMBER OF SEQ ID NOS: 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; OTHER INFORMATION: Description of Artifical Sequence: Recombinant US-09-428-517-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.5%; Score 37.6; DB 4; Length 50937; 54.3%; Pred. No. 3; tive 0; Mismatches 64; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2, Application US/09130114
Patent No. 5976807
GENERAL INFORMATION:
APPLICANT: Damaj, Bassam B.
APPLICANT: Robbins, Alan K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1, Application US/09428517
Patent No. 6251636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           37603 ccgaggetttgcacacggtg 37622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      375 ccgatgatactttcatggtg 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 54.3
Matches 76; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Patentin Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-130-114-2/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 50937
                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-428-517-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
                                                                                                                                                                                                                                 1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ΩD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                          q
                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                              δ
                                                                      ò
                                                                                                                                                  ò
                                                                                                                                                                                                                                 òγ
```

```
1078 AAAGTGCAGGAGATGGGGCCGCCGGAGGTGATGGAGGAGCTGGGGCCGGAGGTGATGGAG 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        206 ctaaggcagctgccggttgtgaaattccgtcgcacaggcgagagtgcaaggtcagaggac 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 266 gacacggettcaggaggagcatgaagtccagattgaaggggtccacgtgggcctagaggct 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         326 giggagoiggaigaiggggagoigtgigccaaggagiitgccaaicccaccgaigaiaci 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1018 GAGCTCCCCCCCCGAGCTCACCCAGCACCTCCCCCCCAGCTCCAGCACCAGCACCGCGCAC 959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        146 aagggccatgagaagggctcatcctggcgcagcgcggacatggaggaggacttattccag 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                             DB 2; Length 1931;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application US/08964127
Sequence 1, Application US/08964127
Patent No. 6277565
GENERAL INFORMATION:
APPLICANT: Grandearl, Andrew David John
TITLE OF INVENTION: NOVEL GENES ENCODING TRANSPORTER-LIKE
TITLE OF INVENTION: MOLECULES
NUMBER OF SEQUENCES: 17
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
TITLE OF INVENTION: Eukaryotic Cells Stably Expressing Genes TITLE OF INVENTION: From Multiple Transfected Episomes FILE REFERENCE: 0867/1D903US1 CURRENT APPLICATION NUMBER: US/09/130,114 CURRENT FILING DATE: 1998-086 NUMBER OF SEQ ID NOS: 36 SOFTWARE: FastSEQ for Windows Version 3.0 SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                               Score 36.6; DB 2;
Pred. No. 0.88;
0; Mismatches 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM Compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: FastESG for Windows Version 2.0b
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/964,127
FILING DATE: 06-NOV-1997
APPLICATION NOMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Crews, Ph.D., L. Lee
REGISTRATION NUMBER: P-43.567
REFERENCE/DOCKET NUMBER: 07334/038001
TELECOMUNICATION INFORMATION:
TELEPHONE: 617/542.5070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   386 tt. Lggtggaagatgcagtggaagcc 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  838 GAGGACGGGACGGGGAGGAC 812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          225 Franklin Street
                                                                                                                                                                                                                                                                                                                                                                          ;
                                                                                                                                                                                                                                                                                                                                 1.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE: 617/542-5070
TELEFAX: 617/542-8906
                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: USA
ZIP: 02110-2804
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 123; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 225 F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                         ; ORGANISM: EBNA
US-09-130-114-2
                                                                                                                                                                                                 LENGTH: 1931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 11
US-08-964-127-3
```

;

```
535 occamyctggcaggtggcattgctgacctcggtggtctttgtaggcatgatgtccagctc 594
                                                                                                                                                                                                                                                                                                                                                             595 cacgetetggggaaatateteagaceagtaeggeaggaaaacagggetgaagateagegt 654
                                                                                                                                                                                                                                                                                                                                                                                     gctgtggactctgtactatggcatccttagtgcatttgcgcccgtgtatagctggatcct 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                902 GGGGCTGGTGGGCCCCTGTGGAGTAGGAGGGGCTGCTGCAGGCTCCTCCACAGGCGTCAT 961
                                                                                                                                                                                                                                                                                                                     782 ceredecreceaegrearceregadeaarcererrearcriegeerrrecereegera 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                         .;
0
                                                                                                                                                                                            Query Match 1.4%; Score 36.4; DB 4; Length 2460; Best Local Similarity 47.1%; Pred. No. 1.2; Matches 112; Conservative 0; Mismatches 126; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Immediate Early Protein From Kaposi's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: Immediate Early Protein From Kaposi TITLE OF INVENTION: Sarcoma-Associated Herpesvirus, DNA TITLE OF INVENTION: Encoding Same And Uses Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0575/52268/JPW/MSC/SKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SYSTEM: PC-DOS/MS-DOS
PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  E: Cooper & Dunham LLP
1185 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US/08/728,323A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1, Application US/08728323A Patent No. 5948676 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Chang, Yuan
APPLICANT: BOhenzky, Roy A.
APPLICANT: Russo, James J.
APPLICANT: Edelman, Isidore S.
APPLICANT: Moore, Patrick S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
NAME: White, John P.
REGISTRATION NUMBER: 28,678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: 05
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-278-0400
TELEFAX: 212-391-0525
                                                                                                 Coding Sequence 498...2057
                                                           MOLECULE TYPE: Genomic DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
LENGTH: 3489 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURENT APPLICATION DATA:
APPLICATION NUMBER: US
FILING DATE:
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: New YOLK
COUNTRY: U.S.A.
ZIP: 10036
                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                               ; NAME/KEY:
; LOCATION:
US-08-964-127-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE:
                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-728-323A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                              655
                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                           595 cacyctctygggaaatatctcagaccagtacggcaggaaaaacagggctgaagatcugcgt 654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     655 gctgtggactctgtactatggcatccttagtgcatttgcgcccgtgtatagctggatcct 714
                                                                                                                                                                                                                                                                                                                                                                 535 cccaagctggcaggtggcattgctgacctcggtggtctttgtaggcatgatgtccayctc 594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  896 GGGGCT( STGGGCCCCTGTGGAGTAGGAGGGCTGCTGCAGGCTCCTCCACAGGCGTCAT 955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                   DB 4; Length 1490;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL OF INVENTION:
TITLE OF INVENTION:
NOLECULES
NUMBER OF SEQUENCES: 17
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                   Ouery Match 1.4%; Score 36.4; DB 4; Length 1
Best Local Similarity 47.1%; Pred. No. 0.86;
Matches 112; Conservative 0; Mismatches 126; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTY: USA

ZIF: 02110-2804

COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: FASTESD for Windows Version 2.0b
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/964,127
FILING BAPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07334/038001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E: Fish & Richardson P.C. 225 Franklin Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY AGENT INFORMATION:
NAME: Crews, Ph.D., L. Lee
REGISTRATION NUMBER: P-43,567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-964-127-1
; Sequence 1, Application US/08964127
; Patent No. 6277565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 07
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617/542-5070
                   INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHRRACTERISTICS:
LENGTH: 1490 base pairs
TYPE: nucleic acid
STRANDENDESS: single
TOPOLOGY: linear
MOLECULE TYPE: Genomic DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEX: 200154
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                    NAME/KEY: Coding Sequence LOCATION: 492...1349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2460 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              617/542-8906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 225 H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                               ;
US-08-964-127-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE:
        TELEX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

6

Gaps .; 0

```
20886 GAGGATGACGAGGAGGATGACGAGGAGGATGACGAGGATGACGAGGAGGAGGAGGACGAG 20827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               320 gaggetgtggagetggatgatgggggaagetgtgcccaaggagtttgccaatcccaccgat 379
                                     260 gaggacgacacggcttcaggagagcatgaagtccagattgaaggggtccacgtgggccta 319
                                                                                                                       320 gaggetgtggagetggatgatggggeagetgtgcccaaggagtttgccaatcccaccgat 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    260 gaggacgacacggcttcaggagagagcatgaagtccagattgaaggggtccacgtgggccta 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 32207;
                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Chany, Yuan
APPLICANT: BOHENZKY, ROY A.
APPLICANT: RUSSO, James J.
APPLICANT: Edelman, Isidore S.
APPLICANT: Edelman, Isidore S.
APPLICANT: EGELMAN, INIQUE ASSOCIATED KAPOSI'S SARCOMA VIRUS
TITLE OF INVENTION: SEQUENCES AND USES THEREOF
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          74; Indels
74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: Patentin PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/NR/757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
1.4%; Score 35.6; DB 4;
Best Local Similarity 51.9%; Pred. No. 9.1;
Matches 80; Conservative 0; Mismatches 74;
                                                                                                                                                                                                                                   20766 AATGAGGACGAGGAGGATGACGAGGAGGAGGACA 20733
  Mismatches
                                                                                                                                                                                                             380 gatactttcatggtggaagatgcagtggaagcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cooper & Dunham LLP
1185 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 45185-F
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 278-0400
TELEPAX: (212) 391-0525
INFORMATION FOR SEQ ID NO: 20:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                  US-08-757-669A-20/c
; Sequence 20, Application US/08757669A
; Patent No. 6183751
; GENERAL INFORMATION:
  ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
NAME: White, John P.
REGISTRATION NUMBER: 28,678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 32207 base pairs
TYPE: nucleic acid
  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY: U.S.A.
ZIP: 10036
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New York
: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-757-669A-20
  80;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STATE:
    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QQ
                                                                                 qq
                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                             ŏ
                                                                                                                                                                   qq
                                                                                                                                                                                                           ò
                                                                                                                                                                                                               ;
0
                                                                                                                                                                                                                                                                                                                                                                 1111 GAGGATGACGAGGATGACGAGGAGGATGACGAGGAGGATGACGAGGAGGAGGACGAG 1170
                                                                                                                                                                                                                                                         260 gaggacgacacygottcaggagagcatgaagtccagattgaaggggtccacgtyggccta 319
                                                                                                                                                                                                                                                                                                                                         320 gaggetgtggagetggatgatggggeagetgtgcccaaggagtttgccaatcccaccgat 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: POLYPEPTIDES FROM KAPOSI'S SARCOMA-ASSOCIATED TITLE OF INVENTION: HERPESVIRUS, DNA ENCODING SAME AND USES THEREOF NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:
ADDRESSEE: Cooper & Dunham LLP
STREET: 1185 Avenue of the Americas
                                                                                                                                                                                                               ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 35.6; DB 2; Length 32207; Pred. No. 9.1;
                                                                                                                                                                          DB 2; Length 3489;
                                                                                                                                                                       Score 35.6; DB 2; Length 3
Pred. No. 2.5;
0; Mismatches 74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/770,379
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1231 AATGAGGACGAGGATGACGAGGAGGAGGACA 1264
                                                                                                                                                                                                                                                                                                                                                                                                                          380 gatactttcatggtggaagatgcagtggaagcca 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 20, Application US/08770379 Patent No. 5849564 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: White, John P.
REGISTRATION NUMBER: 28,678
REFERENCE/DOCKET NUMBER: 5234.
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Chang, Yuan
APPLICANT: BOhenzky, Roy A.
APPLICANT: Russo, James J.
APPLICANT: Edelman, Isidore S.
APPLICANT: Moore, Patrick S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; MOLECULE TYPE: DNA (genomic)
US-08-770-379-20
    TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: (212) 278-0400
TELEFAX: (212) 391-0525
INFORMATION FOR SEQ ID NO: 20
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                          1.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : 32207 base pairs
nucleic acid
EDNESS: double
                                                                                                                                                                   Query Match
Best Local Similarity 51.9%
Matches 80; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM
                                                                                          1..3489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: New York
STATE: New York
COUNTRY: U.S.A.
                                                                    NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-770-379-20/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10036
                                                                                        ; LOCATION:
US-08-728-323A-1
                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                             οy
```

.; 0

AA349847 EST57001 T08271 EST6162 In A1372624 EST175519 AA350346 EST57879 B129640 UI-R-DKO- BG056004 naf86b06.	AW45918 15969 MAR BF412623 UI-R-BT1- AU067579 AU067579 BE097508 UI-R-B01-	AA351693 EST59510 F00438 HSC2UB081 n T10079 SEG1296 bAH AW418091 55608 MAR BG820031 602782582 BE656418 ULT-W-BH0-	B1134483 UI-M-BH3- AK003981 Mus muscu T08675 EST06567 In	BB59038 BB586972 BE590388 SB128 SUG A2979001 2M0255J05 BB593243 BB593243	BB590911 BB590911 AL167780 Tetraodon AL343278 Tetraodon C57850 C57850 Yuii	BB591622 BB591622 BB592855 BB592865 AL313898 Tetraodon BB266609 BB266609 BB595082 BB595082	NTS	972 bp mRNA EST 13-FEB-2001 LTI_NFL003_NBC3 Homo sapiens cDNA clone CSODC001YN02 3 NA sequence. 1 GI:12786828 ens ens EST 13-FEB-2001 1 GI:4278631 1 GI:42786438 ens Euclebostomi;	1 (bases 1 to 972) Li,W.B., Gruber,C., Jessee,J. and Polayes,D. Full.length cDNA libraries and normalization Unpublished (2001)	equencage Web : www.genoscope.cns.fr.	/db_xref="taxon:9606" /db_xref="taxon:9606" /clone_lib="LTI_NFL003_NBG3" /clone_lib="LTI_NFL003_NBG3" /clone_lib="LTI_NFL003_NBG3" /tissue_type="neuroblastoma cells" /lab_host="DH10B" /note="Organ: brain; Vector: pCMVSPORT 6; 1st strand cDNA was primed with a Not1-oligo(dT) primer. Five prime end enriched, double-stranded cDNA was digested with Not I and Econed into the Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies. Contact: Feng Liang Life
	AW345918 BF412623 AU067579 BE097508				BB590911 CNS01UGB CNS05LV9 C57850		ALIGNMENTS	mRNA NBC3 Homo s 828	Jessee, J. ar	pe - Centre National de Sequencage 91006 EVRY cedex - France Segrefégenoscope.cns.fr, Web : www 1972	/organism="Homo sapiens" /db_xxef="taxon:9606" /clone="CSODC001YN02" /clone=lib="LTI_NFL003_NBC3" /sex="male" /lasue_type="neuroblastoma /lab_host="DH10B" /note="Organ: brain; Vector: was primed with a NotI-olige enriched, double-stranded cE cloned into the Not I and EC cloned
		266 10 258 11 299 11 289 10 489 11 360 10						972 bp _NFL003_NB sequence. GI:1278682 etazoa; Ch	972) er, C., NA lib 2001)	Centre N EVRY ce ef @genosc ation/Qua	'Organism="" 'Clow="CSO" 'Clone_lib" 'Clone_lib" 'Tissue_type 'lab_host="" 'Tissue_type 'lab_host="" 'Tissue_type 'lab_host="" 'Inche" 'Inched' 'As Life Tech
		10.0 10.0 9.9 9.6 7.9						AL52335 972 bp AL523335 LTI_NFL003_N Prime, mRNA sequence. AL52335.1 GI:127868 EST: Houran. Homo sapiens Eukaryota, Metazoa; Ci Eukaryota, Metazoa; Ci Eukaryota; Metazoa; Ci Eukaryota; Metazoa; Ci	ses 1 to , Grube ength cl shed (2	ppe Ce 91006 B segref Locat	/orga /db_x /db_x /clon /sex= /lab_ /note was p ens c clone vecto
		255.4 10 255.4 10 252.4 26 224.8 201.8 193.6						AL52335 AL52335 Prime, mR AL52335 AL52335 EST, human. Homo sapi Eukaryota	1 (bas Li,W.B. Full-le Unpubli	Genoscope BP 191 9100 Email: sequ	
										rce	
00	0 0	0 2 2 3 3 4 3 3 4 3 3 4 3 3 4 3 4 3 3 4 3 3 3 3 3 3 3 3 3 3 3 4 3	m m m n	1 M M M	000 www <u>4</u>	4444		RESULT 1 AL523335/C LOCUS DEFINITION ACCESSION VERSION KEYWORS SOURCE ORGANISM	REFERENCE AUTHORS TITLE JOURNAL COMMENT	FEATURES	
GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd. OM nucleic - nucleic search, using sw model	Run on: March 7, 2002, 23:30:57; Search time 3543.72 Seconds (without alignments) 7768.866 Million cell updates/sec	Title: US-09-911-667A-1 Perfect score: 2562 Sequence: 1 cccacgcgtcttgttgaggactgagngccaagtg 2562 Scoring table: IDENTITY_NUC Gapop 10.0 , Gapext 1.0	Searched: 11351937 seqs, 5372889281 residues Total number of hits satisfying chosen parameters: 22703874	um DB seq length: 0 um DB seq length: 2000000000	Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries	ST		8: em_ectov:* 9: em_htc:* 10: qb_est1:* 11: qb_est2:* 13: qb_gs:* 14: em_gss_tun:* 16: em_gss_lun:* 17: em_gss_pln:* 18: em_gss_pln:* 18: em_gss_pln:* 19: em_gss_pro:* 19: em_gss_ror:*	<pre>21: em_gss_other:* Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.</pre>	Result Query No. Score Match Length DB ID Description	C 1 941.4 36.7 972 10 AL523335 AL563357 AL56357 AL

```
/organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="csbcool1vN02"
/clone="tsbcool1vN02"
/clone="tsbcool1vN02"
/clone="tsbcool1vN02"
/clone="tsbcool1vN02"
/tissue=type="neuroblastoma cells"
/lab_host="bHi0B"
/note="Organ: brain; Vector: pcMvSPORT 6; lst strand cDNA was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-strande CDNA was digested with Not I and cloned into the Not I and Eco RV sites of the pcMvSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies. Contact: Feng Liang Life
Technologies, a division of Invitrogen 9800 Medical Center Drive Rockville, Maryland 20850, USA Fax: (1) 301 610
8371 Email: fliangelifetech.com URL:
http://fullength.invitrogen.com" 5 others
                                                                                                                                                                      Homo sapiens

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 1022)

Li,W.B., Gruber,C., Jessee,J. and Polayes,D.

Pull-length cDNA libraries and normalization

Unpublished (2001)

Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      311
                                                                                                 r 13-FEB-2001
clone CSODC001YN02
         14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
 : www.genoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ggctttgtctcgtgggctggtccccagcggctccctccccgaacagctgctgctccaggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        caaggtcagaggaggacacgggttcaggagagcatgaagtccagattgaaggggtccacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1022;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                  HOMO Sapiens CDNA C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 882.2; DB 10;
Pred. No. 1.7e-216;
                                                                                                                                                                                                                                                      Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedax - France
Email: segref@genoscope.cns.fr, Web : www
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4; Mismatches
                                                                                                  AL523336 1022 bp m
AL523336 LTI_NFLO03_NBC3
prime, mRNA sequence.
AL523336
                                                                                                                                          AL523336.1 GI:12786829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34.4%;
98.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                               1. 1022
                                         TACTGCCGACNTC 1
                               cactgccgacatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
Matches 952; Conserv
                                                                                                                                                               human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
                                                                                                                                         VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                               source
                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
           73
                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                              1911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13
                                                                              RESULT
AL523336
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      252
                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                   FEATURES
           a
                              ò
                                                 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                              . . .
Technologies, a division of Invitrogen 9800 Medical Center Drive Rockville, Maryland 20850, USA Fax : (1) 301 610 8371 Email: fliangelifetech.com URL: http://fulllengin/elitrogen.com" 7 others
                                                                                                                    1130
                                                                                                                                                                                                                                          1430
                                                                                                                                                                                                                                                                                                                                                                                                                                              1730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ttatttetggaggettteaageggeatatgtttaeacacetgaggtetaeeeceaeggeaa 1550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gactgcaggagtccagccaccgggagtggggccaggagatggtcggccgaggaatgcacg 1790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ctggtctttgaggctgcagagcttggggggctggcaggccccaactggggcactgattgt 1910
                                                                                                                                                                                                    484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         193 GACTGCAGGAGTCCAGCCACCGGGAGTGGGGGCCAGGAGATGCACGGCCGAGGGATGCACG 134
                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                972;
                                                                                Length
                                                                            Score 941.4; DB 10;
Pred. No. 8.8e-232;
; Mismatches 12; I
                                                                                                  4;
                                                                            36.7%;
nilarity 98.3%;
Conservative 4
                                                                                       al Similarity
956; Conserv
                                         Ø
                                                                             Query Match
Best Local Si
Matches 956,
                                                                                                                                        972
                                                                                                                                                                                                                       853
                                                                                                                                                                                                                                                               793 (
                                                                                                                                                                                                                                                                                                                                            673
                                                                                                                                                                                                                                                                                                                                                                                                                          553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         433
                                                                                                                                                                                                                                                                                 1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1731
                                                                                                                                                                                                    1071
                                                                                                                                                                                                                                                                                                     733
                                                                                                                                                                                                                                                                                                                         1251
                                                                                                                                                                                                                                                                                                                                                                 1311
                                                                                                                                                                                                                                                                                                                                                                                                                                              1431
                                                                                                                                                                                                                                                                                                                                                                                                       1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1671
                                                                                                                                                                                                                                           1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      313
                                                 ORIGIN
                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                     g
                                                                                                                                                            ò
                                                                                                                                                                                                  οy
                                                                                                                                                                                                                   Op
                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                        Ω
                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                 QY
                                                                                                                                                                                                                                                                                                                                                                                                                                           QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ωp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

9

g

Op

ŏ

g

ò

ò

QQ

QQ

ογ

qq

òχ

Db

ò

qq

ò

ద

ò

ò QQ οy Op ò a ò Op

```
//note="Organ: brain; Vector: pCMVSPORT 6; 1st strand cDNA was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-stranded cDNA was digested with Not I and enriched, double-stranded cDNA was digested with Not I and Coloned into the Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies. Contact: Feng Liang Life Technologies, a division of Invitrogen 9800 Medical Center Technologies, a division of Invitrogen 9800 Medical Center Barrian: fliang@lifetech.com URL:
                                                                                                                                                                                                                                                                                     132
                                                                                                                                                                                                                                                                                                        130
                                                                                                                                                                                                                                                                                                                           192
                                                                                                                                                                                                                                                                                                                                             189
                                                                                                                                                                                                                                                                                                                                                                251
                                                                                                                                                                                                                                                                                                                                                                                  249
                                                                                                                                                                                                                                                                                                                                                                                                      311
                                                                                                                                                                                                                                                                                                                                                                                                                        309
                                                                                                                                                                                                                                                                                                                                                                                                                                                             369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         489
                                                                                                                                                                                                                                                                                                                                                                                                                                          371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         699
                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                729
                                                                                                                                                                                                                                              72
                                                                                                                                                                                                                                                        11 GCTTTGTCTCGTGGGCTGGTCCCCAGGGGCTCCCTCCCGAACAGCTGCTGCTGCTCAGGG
                                                                                                                                                                                                                                                                                               accactaccatgtaagggccatgagaagggctcatcctggcgcagcgcggacatggagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ggetttgtetegtgggetggteeceageggeteecteecegaacagetgetgetecaggg
                                                                                                                                                                                                                                                                                     aggaagcggcgcggtgctgtccagcttcccggtgctgaaaaccggagggctcgtcatcc
                                                                                                                                                                                                                                                                                                                                                                                                                                          tgggcctagaggctgtggagctggatgatggtgggcagctgtgcccaaggagtttgccaatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ccaccgatgatactttcatggtggaagatgcagtggaagccattggctttggaaaatttc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5;
                                                                                                                                                                                                          778:
                                                                                                                                                                                                          Length
                                                                                                                                                                     others
                                                                                                                                                                                                                             Indels
                                                                                                                                                                    15
                                                 /tissue_type="neuroblastoma cells"
/lab_host="DH10B"
                                                                                                                                                                                                        Score 736.6; DB 10;
Pred. No. 5.1e-179;
3; Mismatches 2;
                     /glone="CSODD004YD17"
/clone_lib="LTI_NFL001_NBC4"
/sex="male"
   /organism="Homo sapiens'
/db_xref="taxon:9606"
                                                                                                                                                                   254 g
                                                                                                                                                                                                                           13;
                                                                                                                                                                                                        28.8%;
ilarity 97.8%;
Conservative 13
                                                                                                                                                                 193 c
                                                                                                                                                                                                                  Similarity
                                                                                                                                                                   150
                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                   Local
                                                                                                                                                                   COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                         312
                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                              13
                                                                                                                                                                                                                                                                                   73
                                                                                                                                                                                                                                                                                                      7.1
                                                                                                                                                                                                                                                                                                                         133
                                                                                                                                                                                                                                                                                                                                            131
                                                                                                                                                                                                                                                                                                                                                               193
                                                                                                                                                                                                                                                                                                                                                                                190
                                                                                                                                                                                                                                                                                                                                                                                                     252
                                                                                                                                                                                                                                                                                                                                                                                                                       250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               372
                                                                                                                                                                           ORIGIN
                                                                                                                                                                   BASE
                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Craniata; Vertebrata; Ruteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                         431
                                                                            477
                                                                                               491
                                                                                                        596
                                                                                                                                                                                            959
                                                                                                                                                                                                                671
                                                                                                                                                                                                                                  716
                                                                                                                                                                                                                                                                         776
                                                                                                                                                                                                                                                                                                                                                                       911
                                                                                                                                                                           611
                                                                                                                                                                                                                                                      731
                                                                                                                                                                                                                                                                                            791
                                                                                                                                                                                                                                                                                                                                 851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   r 13-FEB-2001
clone CS0DD004YD17
                  CAAGGTCAGAGGACGACGCTTCAGGAGAGCATGAAGTCCAGATTGAWGGGGTCCACG
                                                        tctcagaccagtacggcaggaaaacagggctgaagatcagcgtgctgtggactctgtact
                                                                                                                                                                                                                                                   Contact: Genoscope
Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: segref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
                                                                                              agtggaagctgtctgttctcactggcttggcttggatggctgatgccatggagatgatga
                                                                                                                                                                                                                                                                                           Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota: Metazoa; Chordata; Craniata; Verte
Mammalia; Eutheria; Primates; Catarrhini; Hor
1 (bases I to 778)
Li, M.B., Gruber, C., Jessee, J. and Polayes, D.
Full-length cDNA libraries and normalization
Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
1. .778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AL529154 778 bp mRI
AL529154 LTI_NFL001_NBC4 Hc
Prime, mRNA Sequence.
AL529154 AL529154.1 GI:12792647
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ggtatgatgtg 982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           numan.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
DEFINITION
 298
                                     358
                                                                           418
                                                                                              432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1012
                                                        372
                                                                                                                478
                                                                                                                                    492
                                                                                                                                                      538
                                                                                                                                                                         552
                                                                                                                                                                                          597
                                                                                                                                                                                                              612
                                                                                                                                                                                                                                 657
                                                                                                                                                                                                                                                    672
                                                                                                                                                                                                                                                                                          732
                                                                                                                                                                                                                                                                                                           777
                                                                                                                                                                                                                                                                                                                              792
                                                                                                                                                                                                                                                                                                                                                  837
                                                                                                                                                                                                                                                                                                                                                                                                                            926
                                                                                                                                                                                                                                                                                                                                                                                                                                              972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                       717
                                                                                                                                                                                                                                                                                                                                                                     852
                                                                                                                                                                                                                                                                                                                                                                                      897
                                                                                                                                                                                                                                                                                                                                                                                                          912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AL529154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
```

2;

```
Anote—"Organ: pooled; Vector: pT7T3D-Pac (Pharmacia) with modeled polylinker; Site_1: Not I; Site_2: Eco RI; Equal amounts of plasmid DNA from three normalized libraries (fetal lung NbHL19W, testis NHT, and B-cell libraries (fetal lung NbHL19W, testis NHT, and B-cell vir. CGPP GCB1) were mixed, and ss circles were made in vitro. Following HAP purification, this DNA was used as tracer in a subtractive hypridization reaction. The driver was PCR-amplified cDNAs from pools of 5.000 clones made from the same 3 libraries The pools consisted of I.M.A.G.E. clones 297480-302087, 682632-687239, Scales and M partial Double of Source and Doubl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tumor Gene Index
L Unpublished (1997)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs remail.nih.gov
This clone is available royalty-free through LLNL; contact the
INAGE Consortium (info@image.llnl.gov) for further information.
Seq primer: -400P from Gibco
High quality sequence stop: 464.
Location/Qualifiers
Location/Qualifiers
// Organism="Homo sapiens"
// Arganism="Homo sapiens"
// Cone_lin="InAGE:2977987"
// Cone_lin="InAGE:2977987"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metazoa; Chordata; Catarrhini; Hominidae; Homo.

1 (bases 1 to 578)

NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.

National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AW663941 578 bp mRNA EST 06-APR-2000 1133110.X Soares_NFL_T_GBC_S1 Homo sapiens cDNA clone IMAGE:2977987 3 similar to TR:092217 092217 SV2 RELATED PROTEIN.
                                                                                             1639
                                                                                                                                                                                                    1760 ggccaggagatggtcggccgaggaatgcacggtgcaggtgttaccaggtcgaactctggc 1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           43
     102 GGCGGGGGGTGG1CGGCCGGGGATGCACGGTGCAGGTGTTACCAGGTCGGACTGGC
                                                                                                                                               282 GGCATGGCAAGAGNGGGGGCTCTCANTACTCCGTTCATCGCCCAGGTGATGCTGGAATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 578;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1820 tctcaggaatagtgaccgatgggggactgagctggtctttga 1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 556.8; DB 10;
Pred. No. 1e-132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                42 TCTCAGGAATAGTGACCGATGGGGGGACTGNGCTGGTCTTTGA 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Soares and M. Fatima Bonaldo.
170 c 159 g 111 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AW663941
AW663941.1 GI:7456480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 5
AW663941/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
                                   g
                                                                                          ò
                                                                                                                                               a
                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="neuroblastoma cells"
/lab_host="DH10B"
/lab_host="DH10B"
/lab_host="DH10B"
/note="Organ: brain; Vector: pCWVSPORT 6; 1st strand cDNA
was primed with a Not1-oligo(dT) primer. Five prime end
enriched, double-stranded cDNA was digested with Not 1 and
cloned into the Not I and Eco RV sites of the pCMVSPORT 6
vector. Library was normalized. Library was constructed
by Life Technologies. Contact: Feng Liang Life
Technologies, a division of Invitrogen 9800 Medical Center
Drive Rockville, Maryland 20850, USA Fax: (1) 301 610
8371 Email: fliang@lifetech.com URL:
http://fulllength.invitrogen.com"
49 a 192 c 170 g 117 t 14 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ή
                                                                                                                                                                                                                                                                                                                                                                                                                             Chordata; Craniata; Vertebrata; Euteleostomi; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gettigteatetteteettetgeageeteetgetgtttatetgtgttggaag-aaatgtg 1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ctcactctgttactcttcattgcaagagcgtttatttctggaggctttcaagcggcatat 1519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1520 gtttacacacctgaggtctaccccacggcaacgcgggccctcggcctgggcacctgcagc 1579
                                                                                                                                                                                              AL563357 LTI_NFL001_NBC4 Homo sapiens cDNA clone CSODD004YD17 AL563357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  402 CTCACTCTGTAACTCTTCATGGCAAGAGCGTTTATTTCTGGAGGCTTTCAAGCGGCATAT 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: seqref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
_Location/Qualiflers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 10; Length 642;
Query Match 23.4%; Score 599.6; DB 10; Length Best Local Similarity 96.0%; Pred. No. 9.9e-144; Matches 616; Conservative 2; Mismatches 23; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Li,W.B., Gruber,C., Jessee,J. and Polayes,D. Full-length cDNA libraries and normalization Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. 642
/organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="CSODD004YD17"
/clone=lib="LTI_NFL001_NBC4"
/sex="male"
                                                                                                                                                                                                                                                                                                                    AL563357.1 GI:12912671
                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa;
Mammalia; Eutheria;
1 (bases 1 to 642)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               149
                                                                                                                                                                                                                                                                                                                                              EST.
human.
                                                                                                                                                           AL563357/c
LOCUS
                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1460
                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
     ò
                                                          g
```

QQ ó g οχ Ω ò qq ò g

```
/organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4817829"
/clone="IMAGE:4817829"
/clone="IMAGE:4817829"
/clone="thippocampus"
/lab_host="nippocampus"
/lab_host="nippocampus"
/lab_host="nippocampus"
/lab_host="nippocampus"
/lab_host="nippocampus"
/lab_host="nippocampus"
/lab_host="nippocampus"
/lab_host="nippocampus"
/lab_host="nippocampus"
/lab_nost=1.xhol (gtcqag)
/l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AW957713 596 bp mRNA EST 01-JUN-2000 EST369783 MAGE resequences, MAGE Homo sapiens cDNA, mRNA sequence. AW957713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gcttggatggctgatgccatggagatgatgatcctcagcatcctggcaccacagctgcat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                              DB 11;
                                                                                                                                                                                                                                                                                         21.6%; Score 553.2; DB 11;
ilarity 97.8%; Pred. No. 9.1e-132;
Conservative 0; Mismatches 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       c-agteggtgaegetgtatgeegagtteetteeeatga 794
                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                     133
                                                                                                                                                                                                                                                                                                                             624;
                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                              Best Loca
Matches
                                                                                                                                                                                                                                     COUNT
                                                                                                                                                                                                                                                                                                                                                                                     7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  242
                                                                                                                                                                                                                                                                                                                                                           162
                                                                                                                                                                                                                                                                                                                                                                                                                     222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
AW957713
                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                     BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tctggaggctttcaagcggcatatgtttacacacctgaggtctaccccacggcaacgcgg 1555
                                                                                                                                                                                                                                                                                                                                          5,
                                                                                                                                                                                                                                                                                atcycccaygigaigciggaaiccicigigiaccigaciciggcagittacayiggcigc 1675
                                                                                                                                                                                                                      gccttcggcctgggcactgcagcggcatggcaagagtggtggttctcatcatccttt 1615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST 07-MAY-2001
CDNA clone IMAGE:4817829
                                                                                                                                                                                                                                                                                                 ::
         3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ccgacatcaagaactcacccaagagtatgacct 1948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BG703339 638 bp mRNA
602665286F1 NIH_MGC_95 Homo sapiens on
mRNA sequence.
BG703339.1 GI:13975571
           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCGACATCAAGAACTCACCCAAGAGTATGACCT
           ;
0
            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          human.
            Matches 569;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1916
                                                                                                                                                                                                                        1556
                                                                                                                                                                                                                                                                                   1616
                                                                                                                                                                                                                                                                                                                                              1676
                                                                                                                                                                                                                                                                                                                                                                                                        1736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           86
                                                                    578
                                                                                                   1436
                                                                                                                                518
                                                                                                                                                              1496
                                                                                                                                                                                           458
                                                                                                                                                                                                                                                     398
                                                                                                                                                                                                                                                                                                              338
                                                                                                                                                                                                                                                                                                                                                                           278
                                                                                                                                                                                                                                                                                                                                                                                                                                      218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 6
BG703339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
```

a

g

q δ g ò

ò q ά Dp δ g δy

ò

qq ò q οy qq

ŏ

460

301

241

401

181

341

121

281 61

520

361

580

421

639

481

869

757 900

9

Gaps

221

us-09-911-667a-1.rst

Holt

```
sapiens cDNA, mRNA sequence
                                                                                                                                      Craniata; Vertebrata; Euteleostomi;
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                            colon tumor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tgagctggtctttgaggctgcagagcttggggggctggcaggccccaactggggcactga 1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ttgtcactgccgacatcaagaactcacccaagagtatgacctggaccaacagggttttgt 1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            446
                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostoo
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 536)
Hegde, P., Qi, R., Abernathy, K., Dharap, S., Gaspard, R., Gay, C.,
I.E., Saeed, A.I., Sharov, V., Lee, N.H., Yeatman, T.J. and
Quackenbush, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                        01-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
                                                                                                                                                                                                      Assessment of gene expression patterns in a model of metastasis using a 19,200 element CDNA microarray Unpublished (2000)
Contact: John Quackenbush
The Institute for Genomic Research 9712 Medical Center Dr., Rockville, MD 20850, USA Pax: 301 838 9208
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 536;
551 GCCCCCACCCATCCCCTT - GGAGTTGTCGTTGTTGCCACCAAGAGA 596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                      MAGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                        19.6%; Score 502; DB 10;
99.0%; Pred. No. 1.3e-118;
tive 0; Mismatches 5;
                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="MAGE resequences, M
/note="Vector: pBluescriptSKm"
144 c 174 g 123 t
                                                                     EST377718 MAGE resequences, MAGI Homo
                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
1. .536
                                                        mRNA
                                                                                AW965645
AW965645.1 GI:8155481
                                                                                                                                                                                                                                                                                                       Email: johnq@tigr.org
Plate: 217
                                                          dq
                                                                                                                                                                                                                                                                                                                               Seq primer: Reverse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 99.0
Matches 505; Conservative
                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                           AW965645
                                                                                                                                                                                                                                                                                                                                                                                                              95
                                                                                                                     human .
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                   DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                ORGANISM
                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              387
                                   RESULT
AW965645
LOCUS
                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                         .;
m
                                                                                   Holt
                                                 Euteleostomi;
                                                                                                                     colon tumor
                                                                                                                                                                                                                                                                                                                                                                                                            2122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2361
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1943 tgacctggaccaacagggttttgtgtcttgactcagtttgctcatctcattgaggtcca 2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 caaccaatcagacaccacagagtcacccggccaaacctcagtgaacaaccaaaatat 2182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gagectgaceagtggattetetggeagatggaeatggtgea-tteaaaetggageeaet 2420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         , Gay,C., and
                                                                                                                                                                                                                                                                                                                                                                                        4; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Eutele
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
I (bases 1 to 596)
Hegde, P., Qi,k., Abernathy,K., Dharap,S., Gaspard,R., Gay,
J.E., Saeed,A.I., Sharov,V., Lee,N.H., Yeatman,T.J. and
                                                                                                                                                                                                                                                                                                                                                                 DB 10; Length 596;
                                                                                                            Assessment of gene expression patterns in a model of emetastasis using a 19,200 element cDNA microarray Unpublished (2000)
Contact: John Quackenbush
The Institute for Genomic Research
9712 Medical Center Dr., Rockville, MD 20850, USA
TH: 301 838 3528
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gccccacccagccctnttggagttgccgttgttggcaccaagaga 2468
                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="mAGE resequences, MAGE"
/note="Vector: pBluescriptsKm"
170 c 149 g 144 t
                                                                                                                                                                                                                                                                                                                                                                                       10;
                                                                                                                                                                                                                                                                                                                                                               Score 534.6; DB 10,
Pred. No. 5.5e-127;
0; Mismatches 10;
                                                                                                                                                                                                                                               Location/Qualifiers
1..596
    GI:8147396
                                                                                                                                                                                                                                                                                                                                                               Query Match 20.9%;
Best Local Similarity 97.6%;
Matches 574; Conservative (
                                                                                                                                                                                                              Email: johnq@tigr.org
Plate: 110
                                                                                                                                                                                                                                      Seq primer: Reverse
                                                                                                ,I.E., Saeed,i
Quackenbush,J
                                        Homo sapiens
    AW957713.1
                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                    133
                             human
                                                                                                                                                                                                                                                              source
                                        ORGANISM
                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2421
                                                                                                                                                                                                                                                                                                                                                                                                                1883
    VERSION
KEYWORDS
SOURCE
                                                                                                                                            JOURNAL
                                                                          REFERENCE
                                                                                     AUTHORS
                                                                                                                                                                                                                                                   FEATURES
                                                                                                                     TITLE
                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ٥y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ΩD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δλ
                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

;

g

g ò

```
/note="Organ: pooled; Vector: pT7T3D-Pac (Pharmacia) with a modified polylinker; Site_1: Not 1; Site_2: Eco RI; Bqual amounts of plasmid DNA from three normalized libraries (fetal lung NBHL19W, testis NHT, and B-cell NCI CGAP_GCB1) were mixed, and ss circles were made in vitro. Following HAP purification, this DNA was used as tracer in a subtractive hybridization reaction. The driver was PCR-amplified CDNAs from pools of 5,000 clones made from the same 3 libraries. The pools consisted of I.M.A.G.E. clones 294480-302087, 682632-687239, 726408-728711, and 729096-731399. Subtraction by Bento Soares and M. Fatima Bonaldo. " lothers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tunor Gene Index
L Unpublished (1997)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-rémail.nih.gov
This clone is available royalty-free through LLNL; contact the
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
Trace considered overall poor quality
Seq primer: -40UP from Gibbo
High quality sequence stop: 1.
Location/Qualifiers
// Location/Qualifiers
// Conganism="Homo sapiens"
// Ab_xref="taxon:9606"
// Cone="IMAGE:2663997"
// Ab_bore="tayon:0000"
// Ab_bore="tayon:0000"
// Ab_bore="tayon:0000"
// Ab_bore="tayon:0000"
// Ab_bore="tayon:0000"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metazoa; Chordata; Catarrhini; Hominidae; Homo.
1 (bases 1 to 487)
NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AW173250 487 bp mRNA EST 16-NOV-1999
xj85b11.xl Soares_NFL_T_GBC_S1 Home sapiens cDNA clone
IMAGE:2663997 3' similar to TR:092217 092217 SV2 RELATED PROTEIN.
1162
                                                                                                                                                                                                                            1222
                                                                                                                                                                                                                                                                                                                                         1282
                                                                                                                                                                                                                                                                                                                                                                                                                                                   421 GICTGCAGCATCTCCAGCCGGAAGAAGGCCGTAGAGGCAAAATGCAGCCTGGCCTGCGAG 480
                                                                                                                                             1103 gaccttttcacaccccattttagatggacaactttgctgctgtggtttatatggttttcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AW173250.1 GI:6439198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     126 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AW173250/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                  g
                                                                                                               ò
                                                                                                                                                                       g
                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                    gg
                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Single pass sequencing. Bases called and alt_trimmed with phred v0.889094.a. Vector identified by cross_match with the -minscore 18 and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifers

1. 570

| 1. 570

| Adams = Sus scrofa"

| Adams = Sus scrofa"
| Adams = Sus scrofa"
| Adams = Sus scrofa"
| Adams = Sus scrofa"
| Adams = Sus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus. 1 (bases 1 to 570)
Fahrenkrug,S.C., Freking,B.A., Rohrer,G.A., Smith,T.P.L., Casas,E. Stone,R.T., Heaton,M.P., Grosse,W.M., Bennett,G.A., Laegreid,W.W. and Keele,J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Design and use of two pooled tissue normalized cDNA libraries for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCTTGACTCAGTTTGCTCATCTTCATTGAGGTCCAGGGGATGGGGGATGTTTGCT 506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Gaps
                                                                                                                                                                                                                                                             30-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 11; Length 570;
                                                                                                                                                                                                                                                          B1341271 570 bp mRNA EST 3
368657 MARC 2PIG Sus scrofa cDNA 5', mRNA sequence.
B1341271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        USDA, ARS, US Meat Animal Research Center PO Box 166, Clay Center, NE 68933-0166, USA Tel: 402 762 4356
Fax: 402 762 4390
Email: smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 496.4; DB 11
Pred. No. 3.8e-117;
0; Mismatches 46;
                                                             BACKWARD: GTTTTCCCAGTCACGACG
Plate: 108 row: D column: 4
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                            BI341271.1 GI:15034560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EST discovery in swine Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ouery Match 19.4%;
Best Local Similarity 91.9%;
Matches 524; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                          pig.
Sus scrofa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FORWARD: AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                       DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                           σ
                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
           447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
SOURCE
                                                                                                                                                                                                                                     B1341271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                   LOCUS
```

ò Dp ò QQ δ 셤 ò

```
1. .468
//organism=*Bos taurus**
//do_xref="taxon:9913"
/clone_lib=*MARC 3BOV**
/tissue_type=*pooled*
/lab_host=*DH10B**
/note=*Vector: pcMv SPORT6; Site_l: Xbal; Site_2: Xhol;
/note=*Vector: pcMv SPORT6; Site_1: xbal; Site_2:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosautia; Aves; Neognathae; Galliformes; Phasianidae;
Phasianinae; Gallus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pgpln.pk013.c4 Normalized Chicken Pituitary/Hypothalamus/Pineal Library Gallus gallus cDNA clone pgpln.pk013.c4 5' similar to gb|AAC78627.1 (AF060173) SV2 related protein [Rattus norvegicus],
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aggtatgatgtgtcagggaaccaggaaaaaggcaatcgccaccttaaagagatagca 1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                06-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
                                                                                                                                                                                                                                                                                                                                                                                            Score 423.2; DB 11; Length 468; Pred. No. 2.6e-98; 0; Mismatches 28; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST
FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTCCCAGTCACGACG
Plate: 86 row: E column: 5
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 (bases 1 to 662)
Porter,T.E. and Cogburn,L.A.
                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA sequence.
BI394002
BI394002.1 GI:15087284
                                                                                                                                                                                                                                                                                                                                                                                                    16.5%;
94.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         662 bp
                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 94.0°
Matches 440; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gallus gallus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B1394002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               chicken.
                                                                                                                                                                                                                                                                                                                       87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BI394002
                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Сp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  l (bases I to 46B)
Smith, T.P.L., Grosse, W.M., Freking, B.A., Roberts, A.J., Stone, R.T.,
Casas, E., Wray, J.E., White, J., Cho, J., Fahrenkrug, S.C., Bennett
G.L., Heaton, M.P., Laegreid, W.W., Rohrer, G.A., Chitko-McKown, C.G.,
Pertea, G., Holt, I., Karamycheva, S., Liang, F., Quackenbush, J. and
Keele, J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: smith@email.marc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.909004.e. Vector identified by cross_match with the -minscore 18
and -minmatch 12 options.
                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence evaluation of four pooled-tissue normalized bovine cDNA libraries and construction of a gene index for cattle Genome Res. 11 (4), 626-630 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1519
                                                                                                                                                                                                                                                                                                                                                                                                                           1459
                                                                                                                                                                                                                                                                                                                                           gtttacacacctgaggtctaccccacggcaacgcgggccctcggcctgggcacctgcagc 1579
                                                                                        1340 ggtgtccttgtgactctgtggattattgaccgcctgggggcgcaagaayaccatggccctg 1399
                                                                                                                                                                          248
                                                                                                                25-APR-2001
                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                   .;
0
           487;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BF775076 468 bp mRNA EST 285128 MARC 3BOV Bos taurus cDNA 5', mRNA sequence. BF775076 GI:12122976
           Length
                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Smith TPL
USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
TPL: 402 762 4366
Fax: 402 762 4390
      Score 463.6; DB 10;
Pred. No. 1e-108;
                                                     15;
                                                     0; Mismatches
               18.1%;
96.9%;
                                                         Matches 472; Conservative
                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1820 tctcagg 1826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21180013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COW
               Query Match
Best Local $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                  1460
                                                                                                                                                                                                                                                                                                                                                    1520
                                                                                                                                                                                                                                                                                                                                                                                                                                   1580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 1:
BF775076
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                         487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
```

g

QQ ò

g ò a οy QQ δ QQ δ

q ò qq

δŏ

g

δ

ö

```
93364420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75
                                                                                                                                                                    human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 366;
                                                                                                                                                        EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                      DEFINITION
                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                  JOURNAL
MEDLINE
                                                                                                                                ACCESSION
                                                                                                                                            VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                           AA349847
                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
      ò
                             qq
                                                                                                                               // organism="Gallus gallus"
/organism="Gallus gallus"
/strain="Commercial broiler chicken"
/strain="Commercial broiler chicken
/db_xref="taxon:091" c4"
/clone="pgpln.pk013.c4"
/clone=lib="Wormalized Chicken
pituitary/Hypothalamus/Pineal Library"
/sex="Male and Female"
/issue_type="Pituitary Gland/Hypothalamus/Pineal Gland"
/issue_type="Pituitary Gland/Hypothalamus/Pineal Gland"
/issue_type="Embryonic (d12,d14,d19); post-hatch (w1,w3,w5,w7,w9)"
/lab_host="E. Coli EMDH10B"
/lab_host="E. Coli EMDH10B"
                                                                                                                                                                                                                                                                                /note "Vector: pCMVSPORT6; Library made from equivalent pools of total RNA isolated from each tissue at different ages. Single pass sequencing from 5'-end" 145 c 169 g 177 t 11 others
                                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tgcccattgagaccaaaggcggaggactgcaggagtccagccaccgggagtggggccagg 1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cacctgaggtctacccacggcaacgcgggcctcggcctgggcacctgcagcggcatgg 1586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    caagattggtgctctcatcactccgttcatcgcccaggtgatgctggaatcctctgtgt 1646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                      geggeatetecagteggaagaaggetgtagaggeaaaatgeageetggeetgegaytace 1286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDNA
                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ESTS from Normalized Chicken Pituitary/Hypothalamus/Pineal library USDA/IFAFS Animal Genome Project Unpublished (2001)
Contact: Larry A. Cogburn University of Delaware Townsend Hall, Newark, DE 19717, USA Tel: 302-831-1335
                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>:</u>-
                                                                                                                                                                                                                                                                                                                                                                      Length 662;
                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                           Email: cogurn@udel.edu, www.chickest.udel.edu.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                         DB 11;
                                                                                                                                                                                                                                                                                                                                                                       Score 403.8; DB 11;
Pred. No. 3.1e-93;
0; Mismatches 148;
                                                                                                                                                                                                                                                                                                                                                                          15.8%;
76.8%;
                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                             160
                                                                                                                                                                                                                                                                                                                                                                                                    Matches 489;
                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1527
                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1347
                                                                                                                                                                                                                                                                                                                                                                                                                              1227
                                         JOURNAL
                                                                                                                              FEATURES
                 TITLE
                                                     COMMENT
```

ò qq ò qq δ g Ω Ω δ Op ò

```
Email: arkerlav@tigr.org
For clone availability, additional sequence and expression
information related to this EST, please check the TIGR Human Gene
Index (http://www.tigr.org/tdb/hgi/hgi.html)
Seq primer: MI3 Reverse.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /dev_stage="infant"
/note="Organ: brain; Vector: lafmid BA; Site_1: HindIII;
Site_2: NotI"
1 93 9 110 t 3 others
                                                                                                                           AA349847 371 bp mRNA EST 21-APR-1997 EST57001 Infant brain Homo sapiens CDNA 5' end similar to similar to C. elegans hypothetical protein, cosmid ZK637.1, mRNA sequence. AA349847
                                                                                                                                                                                                                                                                   Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metazoa; Chordata; Catarrhini; Hominidae; Homo.
1 (bases 1 to 371)
Adams, M.D., Kerlavage, A.R., Fields, C. and Venter, J.C.
3,400 expressed sequence tags identify diversity of transcripts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 371;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 364.8; DB 10; Leny...
Pred. No. 2.7e-83;
....matches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The Institute for Genomic Research
9712 Medical Center Drive, Rockville, MD 20850
Tel: 3018699056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="ATCC (inhost):150872"
/db_xref="taxon:9606"
1827 aatagtgaccgatgggggactgagctggtctttgagg 1863
| | | | | | | | | | |
                               601 AGIGAIGAGACAIGAAAICCIGCIGNNNNNIGGAIG 637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone_lib="Infant brain"
/sex="female"
                                                                                                                                                                                                                                                                                                                                                                               from human brain
Nature Genet. 4, 256-267 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                 Other_ESTs: EST57000
Contact: Kerlavage, AR
Bioinformatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14.28;
98.78;
                                                                                                                                                                                                           AA349847.1 GI:2002320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fax: 3018699423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
```

ö

g

Op ò g ò g

ò

d

qq δχ qq

```
Mammalia butneria; Filmates, Catterians, Mammalia butneria; Filmates, Catterians, Mammalia; Lo 355)
Adams, M.D., Kerlavage, A.R., Fleischmann, R.D., Fuldner, R.A., Bult G.J., Lee, N.H., Kirkness, E.F., Weinstock, K.G., Gocayne, J.D., White, C.J., Lee, N.H., Kirkness, E.F., Weinstock, K.G., Gocayne, J.D., White, O., Sutton, G. Blake, J.A., Brandon, R.C., Man-Wai, C., Clayton, R.A., Cotton, M.D., Earle-Hughes, J., Fine, L.D., Filtzgerald, C.L.M., Fitzhngh, W.M., Fritchman, J.L., Geoghagen, N.S., Glodek, A., Kelley, J.C., Liu, L.I., Marmaros, S.M., Merrick, J.M., Moreno-Palanques, R.F., McDonald, J.L., Saudek, D.M., Shirley, R., Phillips, C.A., Ryder, S.E., Scott, J.L., Saudek, D.M., Shirley, R., Small, K.V., Spriggs, T.A., Utterback, T.R., Weidman, J.F., Li, Y., Small, K.V., Spriggs, T.A., Utterback, T.R., Weidman, J.F., Li, Y., Bednarik, D.P., Feng, D.-F., Ferrick, A., Fischer, C., Hastings, G.A., Hu, W. Dimke, D., Feng, D.-F., Ferrick, A., Fischer, C., Hastings, G.A., Hu, Kansch, C., Hungjun, J., Li, H., Meissner, P.S., Olsen, H., Raymond, L., Wenter, Y.S., Greene, J.W., Baseltine, N.A., Fields, C., Fraser, C.M. and Went, Y.F., Wing, J., Xu, C., Yu, G.L., Kuben, S.M., Dillion, P.J., Fannon, Wenter, Y.C., C., Masking, P., Fraser, C.M., and Wenter, Y.S., Greene, J., Maseltine, W.A., Fields, C., Fraser, C.M. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // 1. .355
// Organism="Homo sapiens"
// Clone="UHIB22R"
// Clone=Lib="Infant brain, Bento Soares"
// Clone=Lib="Infant brain, Bento Soares"
// Lab_host="E. coll DH5-alpha"
// Lab_host="E. c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Initial assessment of human gene diversity and expression patterns based upon 83 million nucleotides of cDNA sequence Nature 377 (6547 Suppl), 3-174 (1995)
                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1654 tctggcagtttacagtggctgctgctcctggctgccctggctcctgcttttgcccat 1713
                                                                                                                                                                      A1372624 355 bp mRNA EST 12-JAN-1999 EST175519 Infant brain, Bento Soares Homo sapiens CDNA clone UHIB22R S' end, mRNA sequence.
A1372624 GI:4152490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Other_ESTS: THC98959
Contact: HGI (Human Gene Index)
The Institute for Genomic Research
9712, Medical Center Drive, Rockville, MD 20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 323.2; DB 10; Length
Pred. No. 1.4e-72;
0; Mismatches 13; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualiflers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Fax: (301)-838-0208
Email: hgi@tigr.org
Seg primer: M13 Reverse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12.6%;
96.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tel: (301)-838-0200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 336; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96026280
1959 ggtttt 1964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99
                                                     366
                                                                                                                                                                                                                                                                                                                                                                human.
                          JIIIII
361 GGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE
                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                           15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                   AI372624
LOCUS
                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
           ò
                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                 mRNA EST 03-AUG-1993
Bento Soares Homo sapiens CDNA clone HIBBB58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 366)
Adams, M.D., Soares, M.B., Kerlavage, A.R., Fields, C. and Venter, J.C. Rapid cDNA sequencing (expressed sequence tags) from a directionally cloned human infant brain cDNA library
Nature Genet. 4, 373-380 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .;
O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 11; Length 366;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bento Soares"
t 3 other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 358.2; DB 11;
Pred. No. 1.4e-81;
0; Mismatches 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The Institute for Genomic Research 932 Clopper Road, Gaithersburg, MD 20878 Tel: 3018699056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="ATCC (inhost):84817"
/db_xref="taxon:9606"
/clone="HIBBBS8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone_lib="Infant Brain, 100 c 111 g 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: mdadams@tigr.org
Seq primer: M13 Reverse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           uvery Match 14.0%;
Best Local Similarity 98.4%;
Matches 360; Conservative 0
                                                                                                                                                                                                                                                                                                                                                             EST06162 Infant Brain,
                                                                                                                                                                                                                                                                                                                                                                                           end, mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                       T08271.1 GI:389299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94004965
Contact: Adams, MD
                                                                                                                                     1529 cctgaggtcta 1539
                                                                                                                                                                   ACTGAGGTCTA 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human.
                                                                                                                                                                                                                                                                                                                                                                                                                      T0827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1719
                                                                                                                                                                                                                                                                                                                                      LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                RESULT
T08271
```

1;

Gaps

;

g ò

q ŏ qq ŏ g οy g ò

Length 355;

Description	3 Ratt Homo	AC087893 Homo sapi AE007266 Sinorhizo	AC020509 Drosophil AE003462 Drosophil AE001863 Deinococc	222175 Caenorhabdi AE004767 Pseudomon AC067757 Homo sapi AE008141 Agrobacte	AB026645 Arabidops Ac024128 Arabidops AF218267 Pseudomon	AF060174 Rattus no AF052188 Homo sapi AD018278 Homo sapi	ABU18270 nounce supr L23403 Discopyge o	AB018279 Homo Sapi L10362 Rattus norv	ABO0001 Bacillus su AX079057 Sequence AE007908 Agrobacte	ABU00/35 NOCALUIOI 211115 Caenorhabdi	ABO30953 Fseudomon AE004638 Pseudomon AL122031 Drosophil	AL122030 Drosophil AE003438 Drosophil	S47919 p87=transpo AF305325 Comamonas ALO21411 Streptomy	AE001804 Thermotog A48158 Sequence 5	AL442105 Oryza sat L01788 Rattus norv	X98334 R.norvegicu AE004903 Pseudomon	U10895 Pseudomonas		ROD	(SVOP) mRNA,			Craniata; Vertebrata; Eurereoscomi, Sciurognathi; Muridae; Murinae;		naptic vesicle proteln, f synaptic vesicles B)	
ry ch Length DB ID	2421 10 2104 9	212183 2 11856 1	148432 157851 300542	19834 3 10344 1 62204 2 11286 1	81020 81020 13462	2622 10 1638 9	4948 9 2315 5	3190 9 4353 9 3660 10	35000 221160 2268 10029	16775 1 40699 3	7424 1 11886 1 159167 2	37221 2 126340 2 299537 3	3868 4 7080 1	35654 17641 1885	134092 2 H 3663 10	3.1 3844 10 RATSV2AA 3.1 2132 10 RNOCTK 3.0 12460 1 AE004903	3116 1 PPU10895	ALIGNMENTS		orvegicus SV2 re	73.1 GI:3901267	rat. norvegicus	Eukaryota; Metazoa; Chordata; Craniat Mammalia; Eutheria; Rodentia; Sciurog	ses 1 to 2421)	SVOP, an evolutionarily conserved synaptic vesicle protein, suggests novel transport functions of synaptic vesicles J. Neurosci. 18 (22), 9269-9281 (1998)	99019745 2 (bases 1 to 2421) Janz.R., Hofmapp,K, and Sudhof,T.C.
Result Query	1326.2	209.4 1		84 82.8 81.8	13 74.2 14 74.2 15 70	69.6	69.2 66.2	66.2 66.2 66	23 64 3 24 64 3 25 63 3 26 62.4 3	61.6 61.6	29 59.8 30 59.2 31 58	57.2	35 56.6 36 56.6	53.8 6.83	53.2 51 50.8	50.8 50.2 49.8	45 49.2		RESULT 1 AF060173	DEFINITION RATIUS ACCESSION AF0601		SM	Eukary Mammal	Rattus REFERENCE 1 (ba		MEDLINE 990197 REFERENCE 2 (Da
version	Copyright (c) 1993 - 2000 Compugen Ltd.	OM nucleic - nucleic search, using sw model	Run on: March 8, 2002, 03:28:23 ; Search time 5957.55 Seconds (without alignments) 4552.436 Million cell updates/sec	Title: US-09-911-667A-3 Perfect score: 1644 Sequence: 1 atggaggaggacttattccacgaactctggctctcaggaa 1644	able: II	Searched: 1472140 seqs, 8248589755 residues	Total number of hits satisfying chosen parameters: 2944280	Minimum DB seq length: 0 Maximum DB seq length: 200000000	Post-processing: Minimum Match 00% Maximum Match 100% Listing first 45 summaries	Database : GenEmbl:*	1: qb_drg.* 2: qb_htg.* 3: qb_nr:*	5: gb_ov:* 6: gb_pat:*	7: 9b_ph:* 8: 9b_pl:* 9: 9b_p:*		12: gb_sy:* 13: gb_un:* 14: cb_un:*			.u: em_or:* 21: em_ov:* 22: em_pat:*				30: em_htgo_hum:* 31: em_htgo_inv:* 32: cm_htgo_rd:*			pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.	crelined to market

1140

006

840

780

960

900

1260

096

1320

1140

~

```
aggtcgaactctggctctcagga
                                                                                                                                  1081
                                                                                                                                                              1141
                                                                                                                                                                                          1201
                                                                                                                                                                                                                       1261
                                                                                                                                                                                                                                                    1321
                                                                                                                                                                                                                                                                  1081
                                                                                                                                                                                                                                                                                1381
                                                                                                                                                                                                                                                                                              1141
                                                                                                                                                                                                                                                                                                            1441
                                                                                                                                                                                                                                                                                                                           1201
                                                                                                                                                                                                                                                                                                                                        1501
                                                                                                                                                                                                                                                                                                                                                        1261
                                                                                                                                                                                                                                                                                                                                                                      1561
                                                                                                                                                                                                                                                                                                                                                                                   1321
                                                                                                                                                                                                                                                                                                                                                                                                 1621
                                                                                                                                                                                                                                                                                                                                                                                                               1381
                                                                                                                                                                                                                                                                                                                                                                                                                            1681
                                                                                                                                                                                                                                                                                                                                                                                                                                            1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1861
                                                                        196
                                                                                                                                                                                                                                      1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1621
                                                                                                      1021
                                                                                                                                               841
                                                                                                                                                                                                         961
                              601
                                                                                                                   781
                                                                                                                                                                             901
  541
                841
                                            901
                                                           661
                                                                                       721
                                                                                                                                                                                                                                                               Oy
Db
                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                    Op
                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                 qq
                                                                                                                                                           Dp
                                                                                                                                                                        δλ
                                                                                                                                                                                       qq
                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                         Ωy
                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                       ōλ
                                                                                                                                                                                                                                                                                                                                                                 οqα
                                                                                                                                                                                                                                                                                                                                                                              òγ
                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
           QQ
                              ŏ
                                        qq
                                                      δ
                                                                       qq
                                                                                  οy
                                                                                                                   ò
                                                                                                                                QQ
                                                                                                                                           οχ
                                                                                                                                 _____
                                                                                                          Product="SV2 related protein"

/product="SV2 related protein"

/do_xref="G1:3901268"

/translation="MEEDLFQLRQLPVVKFRTGESARSEDDAASGEHDVQ1EGVRVG

/translation="MEEDLFQLRVFWEDLFWEDRAFTGWKLSVTGTARMADAMEMM

ILSILAPQLHCEMRLPSWAVALLTSVVFIGWASSSTLWGNSDQVGRKTGLKISVFWT

LYYGILSAPAPVYSWILVLLSAPALLYFAVLCFWLDESARTVDVLSGNOEKAIA

ICTVFELVGAGAPPCGKLISRQEDRGKMRDLFTPFWETFLLLWFTDVLSGNOEKAIA

TLKRIATENGAGPWCSISSRKAVEAKCSLACEYLSKEDYMDLLWTLSFEPGVLWTLW

VLDRLGRKKTWALCFGTSGCSLLLFICIGRNVLTLLFIRARAFISGGFQAAVVTPE

VYPPATRALGLGTCSGMARVGCTITPFIAQVMLESSVYLTLAVFSGCCLLAALASGCFL

PIETKGRALQESSHREWGQEWVGRGTNSTGVPRSNSGSQE"

9 569 t
                                                                                                                                                                                                                                                           0;
          Department
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540

      atggaggacttattccagctaaggcagctgccggttgtgaaattccgtcqcacaggc
      60

      |||||||||||||
      ||||||||||

      AtgGAGGAGGACCTGTTCCAGCTCAGGCAGTTGCCGGTGGTGAAATTCCGCCGCACAGGA
      360

                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         840
                                                                                               transport
                                                                                                                                                                                                                                                           Gaps
 Direct Submission
Submitted (16-APR-1998) Center for Basic Neuroscience, Depar
of Molecular Genetics, HHMI, UT Southwestern Medical Center
Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75235, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                              gagaqtgcaaggtcagaggacgacacggcttcaggagagcatgaagtccagattgaaggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gtccacgtgggcctagaggctgtggagctggatgatggggcagctgtgcccaaggagttt
                                                                                                                                                                                                                                                                                                                                                                                                                       atgatgatcctcagcatcctggcaccacagctgcattgcgagtggaggctcccaagctg.
                                                                                                                                                                                                                                                                                                                                                                                                                              ;
                                                                                               to
                                                                                                                                                                                                                                             Length
                                                                                               similar
                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                              DB 10;
                                                                                                                                                                                                                                                            198;
                                                                                               protein;
                                     1. .2421
/ Organism="Rattus norvegicus"
/db_xref="taxon:10116"
/tissue_type="brain"
1. .2421
/gene="$VOP"
301. .1947
/qene="$VOP"
/note="$ynaptic vesicle protein
proteins"
                                                                                                                                                                                                                                            80.7%; Score 1326.2;
ilarity 87.9%; Pred. No. 0;
Conservative 0; Mismatches
                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                  ø
                                                                                                                                                                                                                 459
                                                                                                                                                                                                                                                     Best Local Simi
Matches 1445;
                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                          Н
                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        781
   TITLE
JOURNAL
                                                                    gene
                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                FEATURES
                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                     QY
Db
                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                 οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οý
```

1440

```
AC087893
                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                            181
                                                                             1451
                                                                                                                                                 1511
                                                                                                                                                                               301
                                                                                                                                                                                                                1571
                                                                                                                                                                                                                                                                                  1631
              1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                  AC087893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                              Q
                                                                                                           g
                                                                                                                                                                               셤
                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                  ð
                                            g
                                                                             ò
                                                                                                                                                 ολ
                                                                                                                                                                                                                                                                                                                                                                                                                                Please contact the RZPD: Ressourcenzentrum, Heubnerweg 6, 14059
Berlin-Charlottenburg, GERWANY: Email: clone@rzpd.de Further
information about the clone and the sequencing project is available
at http://www.mips.biochem.mpg.de/proj/CDNA/.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="hypothetical protein"
/protein_id="CAB94818.1"
/db_xrefe="G1:8655659"
/translation="LCFVIFSFCSLLLFICVGRNVLTLLFIARAFISGGFQAAYVYT
                                                                                                                                                                                                                                                                                                                Martinsried, GERMANY
Clone from S. Wiemann, Molecular Genome Analysis, German Cancer
Research Center (DKF2); Email s.wiemannedkfz-heidelberg.de;
sequenced by LMU (Ludwig Maximilians University,
Munich/Germany) within the cDNA sequencing consortium of the German
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PEVYPTATRALGLGTCSGMARVGALITPFIAQVMLESSVYLTLAVYSGCCLLAALASC FLPIEFKGRGIQESSHREWGQEMVGRGHGAGVTRSNSGSGE" 2064. . 2069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                  Homo sapiens
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Enteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
1 (bases 1 to 2104)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="DKF2p761H039"
/clone=lib="761 (synonym: hamy2). Vector pSportl; host /dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ccctgtgctttgtcatcttctccttctgcagcctcctgctgtttatctgtgtggaagaa 1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1271 atgtgctcactctgttactcttcattgcaagagcgtttatttctggaggctttcaagcgg 1330
                                                                               HSM802697 2104 bp mRNA PRI 18-JUN-2000
Homo sapiens mRNA; CDNA DKFZp761H039 (from clone DKF2p761H039).
AL359592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                     This clone (DKFZp761H039) is available at the RZPD in Berlin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 CCCTGTGCTTTGTCATCTTCTCCTTCTGCAGCCTCCTGCTGTTTATCTGTGTTGGAAGAA
                                                                                                                                                                                                                                                                  Blum, H., Bauersachs, S., Mewes, H.W., Weil, B. and Wiemann, S. Direct Submission
Submitted (15-JUN-2000) MIPS, Am Klopferspitz 18a, D-82152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="DKFzp761H039"
/note="similarity to SV2 related protein (Rattus
norvegicus)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 2104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 432.4; DB 9;
Pred. No. 5.9e-102;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="amygdala"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="DKFZp761H039"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        579 g
1921 AGGTCGAACTCTGGCTCTCAGGA 1943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=3
                                                                                                                                                 AL359592.1 GI:8655658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26.3%;
99.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          557 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 433; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .2104
                                                                                                                                                                                                                                                                                                                                                                                                       Genome Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            462 a
                                                                                                                                                                                    human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       polyA_signal
polyA_site
BASE COUNT 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                   LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1331
                                                                                                                                 ACCESSION
VERSION
                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                  KEYWORDS
SOURCE
                                                                                 HSM802697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             đ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
```

```
Eukaryote; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Bukaryote; Metazoa; Chordata; Catarrhini; Hominidae; Homo.

Eukaryote; Metazoa; Chordata; Catarrhini; Hominidae; Homo.

I (bases 1 to 21218);

Alsbrooks, S.L.; Amaratunge, H.C., Abel. R., Barks, F., Barbaria, J., Benton, J.; Briege, M., Brown, E., Brown, M., Bryath, N.P. Buhay, C., Benton, J.; Briege, M., Brown, E., Brown, M., Bryath, N.P. Buhay, C., Burch, P., Burch, E., Brown, M., Bryath, N.P., Buhay, C., Burch, P., Burch, E., Brown, M., Brown, E., Brown, M., Brown, E., Brown, M., Brown, E., Burch, P., Burch, J., Chacko, J., Chavez, D., Chen, G., Chen, R., Coyle, M.D., Dathorne, S.R., David, R., Davila, M.L., Davis, C., Cleveland, C.D., Cox, C., Coyle, M.D., Dathorne, S.R., David, R., Douthwaite, K.J., Davis, C., Cleveland, C.D., Cox, C., Denn, A.L., Ding, Y., Dinh, H.H., Douthwaite, K.J., Davis, C., Cleveland, C.D., Cox, C., Coyle, M.D., Dathorne, S.R., Davis, M. M., Cao, J., Garcia, A., Garner, T., Garrell, C., Becetto, M., Falls, T., Ferraquto, D., Flagg, N., Ford, J., Foster, P., Frantz, P., Garrell, T., Gorrell, J.H., Guevara, W., Gunariere, P., Hale, S., Hamilton, K., Harris, C., Harris, K., Hart, M., Havlak, P., Hawes, A., Hollins, B., Homsi, F., Hodson, A., Hogues, M., Hollins, B., Lowis, L.C., Lid, J., Lid, M., Malls, S., Huber, J., Hulk, M., Joudah, S., Karlsson, E., Kaleston, E., Mackon, M., Lozdo, R., Lid, T., Lid, M., Mapua, P., Martin, R., Matchell, T., Maheshwari, M., Mapua, P., Martin, R., Matchell, T., Maheshwari, M., Mapua, P., Martin, R., Matchell, T., Mahesin, R., Moscan, M., Morgan, M., Moris, S., Moser, M., Naguyen, N., Nukerson, J., Sonosher, T., Soderyen, R., Sonosher, T., Shorsher, T., Shorsher, T., Shorsher, T., Shorsher, T., Shorsher, T., Wall, M., Shorsher, Stanley, H., Thomas, S., Usmani, K., Yasquez, L., Vera, V., Villalon, D., Walliams, G., Walliams, 
                                                                                                                                       1510
                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA HTG 26-JUN-2001
12q clone RP11-423G4, WORKING DRAFT
aatcctctgtgtacctgactctggcagtttacagtggctgctgcctcctggctgcctgg
                                                                                                                                                                           241 AATCCTCTGTGTACCTGACTCTGGCAGTTTACAGTGGCTGCTGCCTCCTGGCTGCCTCCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE, 18 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HTG; HTGS_PHASE1; HTGS_DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC087893.7 GI:14328965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         212183 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
```

0;

COMMENT

```
Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total Total 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 11856)
Barnett, M. J., Fisher, R.F., Jones, T., Komp, C., Abola, A.P.,
Barloy-Hubler, F., Bowser, L., Capela, D., Galibert, F., Gouzy, J.,
Barloy-Hubler, M., Hongar, L., Hyman, R.W., Kahn, D., Kahn, M.L.,
Kalman, S., Keating, D.H., Palm, C., Peck, M.C., Surzycki, R.,
Wells, D.H., Yeh, K.-C., Davis, R.W., Federspiel, N.A. and Long, S.R.
Nucleotide sequence and predicted functions of the entire
Sinorhizobium meliloti pSyma megaplasmid
Proc. Natl. Acad. Sci. U.S.A. 98 (17), 9883-9888 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                       68423 GAAGGGATGCTTTCACCGACCCGTGTCTCCTTCCCTAGGTGATGCTGGAATCCTCTGTG 68482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sinorhizobium meliloti.
Sinorhizobium meliloti
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;
Rhizobiaceae; Sinorhizobium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sinorhizobium meliloti plasmid pSymA section 72 of 121 of the complete plasm.d sequence.
AE007266 AE006469
AE007266.1 GI:14523915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 212183
                                                                                                                                                                                                                                                                                                                       ;
                                                                                                                                                                        1798 others
                                                                                                                                                                                                                                                                                                                         Indels
212183: contig of 2197 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Sinorhizobium meliloti"
                                                                                                                                                                                                                                                                                                                         21;
                                                                                                                                                                                                                                                                        DB 2;
                                                                                                                                                                                                                                                                        Score 209.4; DB 2
Pred. No. 8.3e-44;
0; Mismatches 21
                                                                                                                                              /clone="RP11-423G4"
55581 a 50102 c 50442 g 54260 t
                    Location/Qualifiers
1. 212183
7. Organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="129"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /strain="1021"
/db_xref="taxon:382"
/plasmid="pSymA"
                                                                                                                                                                                                                                                                        Ouery Match 12.7%;
Best Local Similarity 91.4%;
Matches 222; Conservative
     209987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Db 68663 GAA 68665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1642 gaa 1644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AE007266/c
                                                                                                                                                                             BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                            QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).
NOTE: This is a 'working draft' sequence. It currently
consists of 18 contigs. The true order of the pieces
is not known and their order in this sequence record is
                                                                                                                       Direct Submission
Submitted (06-FEB-2001) Human Genome Sequencing Center, Department
Of Molecular and Human Genetics, Baylor College of Medicine, One
Baylor Plaza, Houston, TX 77030, USA
On Jun 8, 2001 this sequence version replaced gi:13928634.
                                                                                                                                                                                                                                                                                                                                                                                                                       Center clone name: RP11-423G4

Sequencing vector: Plasmid; M7789
Sequencing vector: Plasmid; M7789
Chemistry: Dye-terminator Big bye: 100% of roads
Assembly program: Phrap; version 0.990329
Consensus quality: 205609 bases at least Q40
Consensus quality: 206074 bases at least Q20
Estimated insert size: 205251; sum-of-contigs estimation
Quality coverage: 0x in Q20 bases; sum-of-contigs estimation
Quality coverage: 5.3x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NOTE: Estimated insert size may differ from sequence length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41137: contig of 41137 bp in length 41237: gap of unknown length 69033: contig of 27796 bp in length 69133: gap of unknown length 89390: contig of 20257 bp in length 89490: gap of unknown length 100180: contig of 10590 bp in length 112787: contig of 10590 bp in length 112787: contig of 12507 bp in length 112787: contig of 12507 bp in length 12788: contig of 12507 bp in length 12788: gap of unknown length 137576: contig of 13598 bp in length 137576: gap of unknown length 145046: contig of 7370 bp in length 145046: contig of 7370 bp in length 145046: gap of unknown length 145046: gap of unknown length 145046: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown length
of 9686 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown length
of 7422 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bp in length
length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of 8042 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                         Center: Baylor College of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of unknown l
contig of 6177 b
gap of unknown l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of 9758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of 6961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown
                                                                                                                                                                                                                                                 ----- Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of
          Weinstock, G. and Gibbs, R.
                                                                        2 (bases 1 to 212183)
Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100280:
112787:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        172312:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           209886:
                                                                                                                                                                                                                                                                                                       Center code: BCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 154832:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          154932:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               164690:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            164790:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 172212:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         179373:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   185550:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 198654:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               203818:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               193692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93792:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        198754:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       203918:
                                 Direct Submission
                                                      Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41138
41238
69034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   198655
198755
203819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           203919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        89391
89491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          112788
112888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 127839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             154933
164691
164791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        72213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             185651
193693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          54833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      69134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         145047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              93793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          85551
                                                                                                                                 TITLE
JOURNAL
                                                           JOURNAL
                                                                                   REFERENCE
                                                                                                          AUTHORS
                                 TITLE
```

dene

CDS

```
LDIRWVDFRCSAPPAGTDYRLFFGAPVHFDQRRTRLVFDAFWILPHTUHGVNCWLIGRR
RAPANILVRYRHDAGLSAAIRORLHATAPSAWPGFEAIAARMRIAPTLKRRIRQEG
QTYRSIKEDLFRHDAGLSAAIRORTNVAQLAVELGFSEPSAFHRAFRKWTGKSPAQFRR
NATQTDFRESSSPRKRTQPQES"
Complement (5047. 5565)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="WIPVETSWEEIEAVCLEALTLHGAAAETARAVAGAITRAEADGN
RVCGLYYLPIFCRHLAIGKVDGEAVPEVTTRGVTVTVDARSGFAHPAIAAGTPALIDL
ARQAGLAAMAVRNSYNCLALGHHVRPLADAGLIGICVSNAPASVAPPGATRALFGTNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LAFAVPSKEGAPT IVVDGSKISAVKTEMILERDRGERI PIGNAGDGNGOPTTDAATGL
EGSLLPAGGRKGANIALLVEVLAAALTGSALSTEASAFGNEEGGPPHVGQFLIAIDPD
HFAÄGHFSEAMDNLVASHDAAGVRLPGHFGRKQPVCVDADLMKKAVLLSKSKNRQKPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /translation="mrftgtcyrahDprwafkpasgdgaaikgarfnPkgvkTLYLAL
SIMTAVKEANGGFAHRIDPCVLCSYDIDCADIADLTAERGRAEHGVSLEEMACSWAGA
FAEGRRPASWAIYNRLHPRGTAGILVPSFAPGTEAGDRNLVLWTWGPDLPHRLDVYDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="MAQAQKIQSDGGPLILSYMDKGGKIAVQQVAVGFGMSKTQLAET
AGLARETLYRPERSRGTKTQNRLREMLEIISRVTDWAGGKEQAMAWYRAQPLPAFGGR
TAEALVKDGKAAAVRDYLDHWALGGFA"
complement (6059. 7063)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /function="Small molecule metabolism; Central intermediary
                                                                                                          /translation="MENERGESHMERRMIAPCFMDDTLECLRRHGVDAGPLLAQAGLP
SIVTGPVSANOYGAFWHAVAQAMDDEFFGEGARPMRAGSFALLCHAILSTATLEHAIR
RALRFLRVVLENPHGELVVENGLAQIVIKDAGATRSAFAYRTFWIILHGVNCWLIGRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="glimmer prediction; global similarity to muconate cycloisomerase in P. putida (GI: 77758); Pfam domain similarity to mandelate racemase / muconate lactonizing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="glimmer prediction; global similarity to malate-dehydrogenase from M. fervidus (GI: 80950)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /transl_table=11
/product="Putative muconate cycloisomerase"
                transcription factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /function="Small molecule metabolism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /function="Miscellaneous: Unknown"
/note="glimmer prediction"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /function="Miscellaneous; Unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transI_table=11
/product= Hypotchetical protein"
/protein.id="AAK6545.1"
/db_xref="G1:14523920"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /transl_table=11
/product_"Hypothetical protein"
/protein_id="AAK65453.1"
/db_xref="G1:14523921"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="glimmer prediction"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="Putative"
/protein_id="AAK65454.1"
/db_xref="G1:14523922"
                       /product="Putative transor/
/protein_id="AAK65451.1"
/db_xref="G1:14523919"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="SMai461"
complement(7060. .8184)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(7060. .8184)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         metabolism; amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement (5562. .5951)
/gene="SMa1456"
complement (5562. .5951)
/gene="SMa1456"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(6059. .7063)
/gene="SMa1459"
                                                                                                                                                                                                                                                                                                                                                                                                  complement(5047. .5565)
/gene="SMa1455"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5.1.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="SMa1461"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="SMa1459"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /EC_number="5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SGRLPKDQLSWG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="glimmer prediction; global similarity to eukaryotic
3-hydroxyacyl-CoA type II (GI: 2569966); Pfam domain
similarity to short chain"
/codon_start=1
                                                                                                                                                                                                                                                                          /product="putative transmembrane transport protein"
/product="putative transmembrane transport protein"
/protein_id="AAK65448:1"
/protein_id="AAK65448:1"
/protein_id="MAK65448:1"
/translation="MAIAAAR0"
ADAMOVLAVGTANSTAATFGLTVPOALQTGTLFFLGMLFGAAGFGRLADRIGRRRVL
IATVACDAAVGGLLSVPAQDFTVLLLIEFTLGAAVGGTLPVDYAMMAEFLAARNGRRVL
VMLEGFWAVGTLIVALAAWAASLAGVADAWRYIFAVTAIPALIGVGLRFLVPESPIXI
LRIGKTSEARAIVDEILLVVNGKMRLGAGASLVPPPPTASAGIFSADLRKRSEIMILAIW
FLYSISYGTGFWWAPPRLAGEGFGFYRVGYGTGLLVVALAAOIPGYALAAYGVEWGRRPT
LIGFGLLSALGCLLLSALGCLAPAGATAMIIGYSELINSFALLGTWGALYATYPELYPTASRAIG
MGAAGAMARLGGLLAPSLAGGLAFGLATAGIFSERAIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /function="Small molecule metabolism"
/function="Small molecule metabolism"
/note="glimmer prediction: global similarity to phaA, a thoiolase from P. putida (GI:1857942); global similarity to acetyl-CoA acetyltransferase from C. acetobutylicum and A. eutrophus (GI: 1174677); Pfam domain homology to thiolase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /LTAIN 1 ALL TO AT MINIOUS OF THE LOS FOGELK DE SAADE GAAA I VO LALK RA
GLAPDRANDES SENTYME GOOGAPARAGALGAGE PERVORATIVA INCACCOM RAMLAH
DEL KAESSAS IVVAGGOGAPARAGA LGAGE PERVORATIVA INCACCOM KARALAH
MGSFABCA BAYOFTRSAQDEYA I LDRANGS TI GHOKVEDHIMFELGE EDAY DKGRE
MGSFABCA BAYOFTRSAQDEYA I ASLEKAQKA SADGS FAEEI VPLSI ASGKGERTVN
LDEQPOKARLDKI PILKPAFROGGTTAANASI SI SOGAAALUMRRSADA KOGT GPLA
VICGHATHADAPS LETTAAT I KALCKRI KOWDIGEV DEFAVV WAAAMRELG
LDAEV NVAKGAACALGHPI GASGARVI VT LUNALRRKGIRRGIAS VCI GGGEATAVAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /protein_id="AAK65450.1"
/db_xref="GI:14523918"
/translation="MQLKSRVFIVTGASSGLGAAVTRMLAQEGATVLGLDLKPPAGEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /function="Small molecule metabolism; Central intermediary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAAELGAAVRFRNADVTNEADATAALAFAKQEFGHVHGLVNCAGTAPGEKILGRSGPH
ALDSFARTVAVNLIGTFNMIRLAAEVMSQGEPDADGERGVIVNTASIAAFDGQIGQAA
YAASKGGVAALTLPAARELARFGIRVVTIAPGIFDTPMMAGMPQDVQDALAASVPFPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /function="Miscellaneous; Not classified regulator"
/function="glimmer prediction; global similarity to OruR from
prediction; global similarity to OruR from
putilization; pfam domain similarity to N-terminal
helix-turn-helix motif"
                                                                                                                        /note="glimmer prediction; global similarity to Benk, a benzoate transport protein in P. putida: Pfam domain homology to sugar and other transporters"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RLGRAEEYAALVKHICENTMLNGEVIRLDGALRMAPR"
3995. 5065
7/9ene="SMa1454"
3995. 5065
/gene="SMa1454"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="Probable thiolase"
/protein_id="AAK65449.1"
/db_xref="GI:14523917"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="SMa1452"
complement(3133. 3900)
/gene="SMa1452"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement(1918. 3108)
/gene="SMa1450"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement(3133. .3900)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(1918. .3108)
complement(116. .1468)
/gene="SMa1447"
                                                               complement(116. .1468)
/gene="SMa1447"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transl_table=11
/product="Probable"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                             /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               metabolism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EISG
```

gene

CDS

gene

CDS

gene

CDS

```
Query Match
Best Local Simil
Matches 153; C
                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                        ACCESSION
                   AC004642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                  LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . .
                                      /uc.anslation="MVKISWRVRPLVLPLKOPYHWSYGIRESFAVNLIEIEANDGTV
/translation="MVKISWRVRPLVLPLKOPYHWSYGIRESFAVNLIEIEANDGTV
GIGCTVAPDOTGTAALLYRLAKHLVGHSPBDVAPLIARFEHGEVLGHGANIBHAANO
IFSGIDAMMULOGAGLAGLAVHQHSPBDVAPLIARFEHGEVLGHGANIBHAANO
IFSGIDAMMULOGAHRKAUGTPYLOGETAEELARDAAVGHAOG
ERVEYLKVGKGEKLDLEITAAVRGEIGDARLKLDANEGWSVHDAINMCRKLEKYDIEF
IEOGTVSWSIPAMAHVREKVGIPIVADOAAFTLYDVYEICRORADMICIGREEIGGI
OPMMKAAAVBAAANGAAGGIKICIHSSFTTGITTCAEHHIGLAIPNLDDGNOIMWQLVQEDIV
SSPDLTPKNGWLDARRKGGGGAEDLAAEGEGRYAASR"
complement(8311...9201)
/gene="SMai462"
/function="Cell processes; Transport of small molecules"
/note="glimmer prediction; global similarity to
choline-binding protein precursor from B. subtilis
(G1:7404430) and several putative ABC transporter
proteins; adjacent ORRs encode other putative members of
the choline transport system"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1303 Acceccerredares contrates contrates and a second contrates and seco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1243 ACGCTTTTCTTCTCGGAATGCTGTTCGGCGCCGGGTTTCGGCAGGCTCGCGGACCGG 1184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1423 ACAATCACAGTAGACGATGCGCTCGATCGCGCCGGCACGGGAACTTACCAGCGCAGACTG 1364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1063 GTCGGCGCACACTGCCGGTCGACTATGCGATGATGGCGGAGTTCCTGCCGGCCCGGAAC 1004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           676 gtcctggctgtgttcgtgatgcccagc-----ctgggctggcgttggctgctcatc 726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tctgttctcactggcttggcttggatggctgatgccatggagatgatgatcctcagcatc 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTTATCTGCTCCGCCTGGGAAAGACGTCCGAGGCGAAGGCCATCGTCGTCGATGAGATCTC 764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tacggcaggaaaacagggctgaagatcagcgtgctgtggactctgtactatggcatcctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCGCCGCCGCCGCTCTGTATCGCCACCGTCGCCTGCGGATGCCGTTTCGGTCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ctctcagctgtcccgctcctctttgccgtgctgtgtttctggctgcctgaaagtgca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            319 ctggcaccacagctgcattgcgagtggaggctcccaagctggcaggtggcattgctgacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            379 tcggtggtctttgtaggcatgatgtccagctccacgctctggggaaatatctcagaccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       agtgcatttycgcccgtgtatagctggatcctggtgctccgggggcctggtgggcttcggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         atoggagy---agttccccagtcggtgacgctgtatgccgagttccttcccatgaaagcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           agagetaaatgtatttgetgattgaggtattetggggeeategggaeagtgttegaggte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             883 GTGACGGCAATCCCGGCACTGATCGGCGTGGGCCTGCGTTTCCTGGTGCCGGAATCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         aggtatgatgtgtcagggaaccaggaaaggcaatcgccaccttaaagaggatagca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5.5%; Score 91; DB 1; Length 11856; ilarity 48.3%; Pred. No. 7.4e-13; Conservative 0; Mismatches 335; Indels 1
/protein_id="AAK65455.1
/db_xref="GI:14523923"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           actgaaaacgg 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCGTCAACGG 753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              324;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               823
                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Бb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οÿ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ΩD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
```

```
Drosophila melanogaster (Subclones in Sac from Pl clones DS00543)
Drosophila melanogaster (Subclones in Sac from Pl clones DS00543)
Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Eukaryota; Neoptera; Endopterygota; Diptera; Brachycera;
Muscomorpha; Ephydroidae; Drosophilidae; Drosophila.

1 (bases 1 to 148432)
Celniker, S.E., Aghavani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Chew, M., Doyle, C.M., Farfan, D.E., Flanagan, J., Houston, K.A.,
Hummasti, S.R., Karra, K., Kearney, L., Kim, S.H., Lee, B.,
Lomotan, M.A., Mazda, P., Mok, M.S., Moshrefi, A.R., Moshrefi, M.,
Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Punch, D., Snir, E.,
Twomey, B., Wan, K.H., Whitelaw, K.R., Yee, A., Zhang, R., Zieran, L.L.
Sequencing of Drosophila chr. Jsome 2R, region 60B1-60B10
Upublished (1997)
L Obases 1 to 148432)
Celniker, S.E., Adhavani, A., Arcaina, T.T., Baxter, E., Blazej, R.G.,
Chew, M., Doyle, C.M., Farfan, D.E., Flanagan, J., Houston, K.A.,
Hummasti, S.R., Karra, K., Kearney, L., Kim, S.H., Lee, B.,
Lomotan, M.A., Mazda, P., Mok, M.S., Moshrefi, A., Moshrefi, M.,
Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Punch, D., Snir, E.,
Twomey, B., Wan, K.H., Whitelaw, K.R., Yee, A., Zhang, R., Zieran, L.L.
Twomey, B., Wan, K.H., Whitelaw, K.R., Yee, A., Zhang, R., Zieran, L.L.
Thomey, B., Wan, K.H., Whitelaw, K.R., Yee, A., Zhang, R., Zieran, L.L.
Thomey, B., Wan, K.H., Whitelaw, K.R., Yee, A., Zhang, R., Zieran, L.L.
Thomey, B., Wan, K.H., Whitelaw, K.R., Yee, A., Zhang, R., Zieran, L.L.
Thomey, B., Wan, K.H., Whitelaw, K.R., Yee, A., Zhang, R., Zieran, L.L.
Thomey, B., Wan, K.H., Whitelaw, K.R., Yee, A., Zhang, R., Zieran, L.L.
Thomey, B., Wan, K.H., Whitelaw, K.R., Yee, A., Zhang, R., Zieran, L.L.
Thomey, B., Wan, K.H., Whitelaw, K.R., Yee, A., Zhang, R., Zieran, L.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Berkeley, CA 94720
For further information about this sequence, including its location
and relationship to other sequences, please visit our sequence
archive Web site
(http://fruitfly.berkeley.edu/sequence-archive.html) or send email
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
Submitted (01-MN-1998) Berkeley Drosophila Genome Project, MS
64-121, Lawrence Berkeley National Laboratory, One Cyclotron Road,
Berkeley, CA 94720, US
Sequence submitted by:
Berkeley Drosophila Genome Project
Lawrence Berkeley National Laboratory, MS 64-121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ctgtctgttctcactggcttggattggttggtgatgccatggatgatgatgatcctcagc 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gatactttcatggtggaagatgcagtggaagccattggctttggaaaatttcagtggaag 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 148432;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Drosophila melanogaster"
/db_xref="taxon:727"
/chromosome="2R"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 89.4; DB 3;
Pred. No. 1.8e-12;
); Mismatches 106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         drosophilaemhgc.lbl.gov.
orary locations: 63_6, 83_30.
Location/Qualifiers
1. .148432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /map="60B1-60B10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
;
                                                                                                                                                                                                                                                                                      AC004642.1 GI:3097827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5.48;
59.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             to drosop
Library 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               38713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

DEFINITION

ACCESSION VERSION KEYWORDS

RESULT AC020509

QQ

Dp

g ò ORGANISM

AUTHORS TITLE JOURNAL

COMMENT

REFERENCE

```
NERS DIGOSOPHILA MELBOGASTER

ELKATOVICE: MELBOGASTER

ELKATOVICE: MELBOGASTER

FURTAVOLE: MELBOGASTER

FURTAVOLE: MELBOGASTER

AND CONTRAIN EDIVATIONAL DIPPLEASE BREAKPOCKERS

AND CONTRAIN EDIVATIONAL DESCRIPTIONAL GROUPS BROOKERSONS. IN.

SOLITON C. CELLIKET, S.E., LI, P.W., HOSKINS, R.A., GABLE, R.F.,

AND CONTRAIN S.E., RICHARGES, ASHDHUTE, M., GHORIES, R.A.,

SOLITON, G.G., WORTHAIN, J.R., YARDASTER, G., CHARDE, O., CHON, L.X.,

BERNOON, R.C., ROGERS, Y.H., BLACE, R.G., CHARDE, M., PIEBIEFER, B.D.,

BERNOON, R.C., ROGERS, Y.H., BLACE, R.G., CHARDE, M., PIEBIEFER, B.D.,

BENOON, R.C., ROGERS, Y.H., BLACE, R.G., CHARDE, M., PIEBIEFER, B.D.,

BENOON, R.C., ROGERS, Y.H., BLACE, R.G., CHORN, A.,

AND CHARD, M.R., BOUCK, J., BLOKSTEIN, P., BOLLLER, B., BULLER, M.C.,

BOLCHAN, M.R., BOUCK, J., BLOKSTEIN, P., BOLLLER, B., BOLLCHAN, R., BOUCK, J., BOKSTEIN, P., BOLLLER, J., BOLLER, M., CAMLEY, S., DANINGOV, B.C.,

BOLCHAN, M.R., BOUCK, J., BLOKSTEIN, P., BOLLLER, J., BOYLER, P., BULLER, M.C.,

BOLCHAN, M.R., BOUCK, J., BORNES, M., DOSAN, C., CORTELL, J. H., GUAZ, COLON, C., DOWNORS, M., DOWL, L.E., DOWNORS, M., DOWL, L.E., DOWNORS, M., DOWL, L.E., DOWNORS, M., DOWL, L.E., DOWNORS, M., DOWL, L. B., MORTELL, M., H., IDESCRAMAN, T., HONNOW, B.C.,

COLON, F., H.H., IDESCRAMAN, J., KETCHIN, J., HONNOW, B.C.,

COLON, M.H., LIDERSON, D., HOLLE, M., MONDERY, C.,

LIJANG, Y. L.I.Z., LILANG, Y. LIN, X., MALLE, B., MCINTOSH, T.C.,

LIJANG, Y. L.I.Z., LILANG, T., LIN, X., MALLE, B., MCINTOSH, T.C.,

LIJANG, J. WORDRESON, D., MALLE, B., MCINTOSH, T.C.,

LIJANG, J. WILL, W. PASCERD, D., MALLE, B., MCINTOSH, T.C.,

MUNDY, D. W. NEDSON, D., MALLE, S., B., MCINTOSH, T.C.,

SIMPSON, M., SKUPSK, M.P., SMITH, T., SPITER, C., SEPERATION, SIMPSON, M., SKUPSK, M.P., SMITH, T., SPITER, E., SEPRATION, S., WORTER, C., SHAR, M., WORDS, S., WORTER, M., WORTER, M., WORD, S., WORTER, M., WORTER, M., WORD, S., WORTER, M., WORTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(join(8417. .8923,14564. .14687,19965. .>20155))
      AE003462 300542 bp DNA INV 04-0CT-2000 Drosophila melanogaster genomic scaffold 142000013386038 section 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 (bases 1 to 300542)
Adams, M.D., Celniker, S.E., Gibbs, R.A., Rubin, G.M. and Venter, C.J.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (21-MAR-2000) Celera Genomics, 45 West Gude Drive,
Rockville, MD, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="FLYBASE:FBan0011169"
/db_xref="FLYBASE:FBgn0034905"
/db_xref="FLYBASE:FBgn0034905"
complement(<8417. .>20155)
/gene="CG11169"
/map="60A1-60A2"
/db_xref="FLYBASE:FBan0011169"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
1. .300542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product-"CT31208"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /chromosome="2R
                                                                               of 15, complete sequence.
AE003462 AE002575
                                                                                                                                            AE003462.1 GI:7291637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
AE003462/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA
                                                               DEFINITION
                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE
                                                                                                                        ACCESSION
                                                                                                                                                  VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA HTG 03-JAN-2000
*** SEQUENCING IN PROGRESS ***, in ordered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DD 107182 GATACCTACACTGTTCAGCAGCGATCAATGCCTTCGGTTTCGGA;GGTTTCACGTCAAG 107241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DD 107242 CTGTCGCTCTTCGTGGGGGCTCTGCTGGTGGCCGTCCATGGAAATGGCCATTCTCAGC 107301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DD 107302 ATATTGGCCCGGTCTTTGTTCTGCGAGTGGAATGTCACAAGTTCCAGCAGGCATCCGTC 107361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DD 107362 ACAACAGTGGTGTTTTTGGGCATGATGTTGAGTTCCAGTTTTTGGACACAGCTGAGCAAC 107421
                                                                                                                                                                                     75245 CTGTCGCTCTTGGTGGGGCTCTGCTGGATGTCCCACCTCCATGGAAATGGCCATTCTCAGC 75304
                                                                                                  256 etgicigiteteaetggettggettggatggetgatgecatggagatgatgatgatecenge 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   316 atcctggcaccacagctgcattgcgagtggaggctcccaagctggcaggtggcattgctg 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gatactttcatggtggaagatgcagtggaagccattggctttggaaaatttcagtggaag 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This sequence was identified as CDM:10213488 by the submitter. For more information on this record e-mail to fly@celera.com. For more information on this record e-mail to fly@celera.com. * NOTE: This is a 'working draft' sequence. * This sequence will be replaced. * by the finished sequence as soon as it is available and * by the finished sequence as soon as it is available and the accession number will be preserved.
                                                                  316 atcctggcaccacagctgcattgcgagtggaggctcccaagctggcaggtggcattgctg 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Euraryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Euraryota; Metazoa; Arthropoda; Tracheata; Brachycera: Prergyca; Neoptera; Endopterygota; Diptera; Brachycera: Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 15781)
Adams. M. and Venter, J.C.
Buiret Submission
Submitted (30-DEC-1999) Celera Genomics, 45 West Gude Drive, Rockville, MD, USA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        376 acctcggtggtctttgtaggcatgatgtccagctccagctctggggaaatatctcagac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 157851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
36910 c 37402 g 42373 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 5.4%; Score 89.4; DB 2;
Best Local Similarity 59.1%; Pred. No. 1.8e-12;
Matches 153; Conservative 0; Mismatches 106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Db 107422 AGATATGGCCGGAAGTCGG 107440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster,
                                                                                                                                                                                                                                                                                                                                                                             75425 AGATATGGCCGGAAGTCGG 75443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AC020509.1 GI:6664388
                                                                                                                                                                                                                                                                                                                       436 cagtacggcaggaaaacag 454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   157851 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HTG; HTGS_PHASE2.
fruit fly.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  41166 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AC020509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC020509
```

BASE COUNT ORIGIN

FEATURES

196

ò

ò

```
/mote="60A2-60A2"

/db_xref="FLYBASE:FBan0004817"

/db_xref="FLYBASE:FBan0010278"

/db_xref="FLYBASE:FBan0010278"

/note="Ssrp"

                                                                                                                                                                                                                                                                                                                                                                                                                 complement(join(28956. .29668,29729. .31300,31378. .31553))
                                                                                                                                                                        LPLYMPTKLLLVVWIVLSAPAANVWIFDAILRPVLAKRQEEIDHFLHRGKEKLLIDAL
ASMYQLVAQYQISVLPPVSSFWSRSSTAPLRTSDLLQDSTGEGIGGRTSEDTDSANVS
VQNLSSGSSPVGSLEHLRDDSEELLVGVSKATTHLQAEQFOSDVSESSPRIINRRPQR
KFKNAIAIASATKLEDLHDDVEDLLAKTAMETSGQEVRQQRQPASRRRLLAQSFVKPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                /translation="MGPAWQTYKTLNSGDEEFLAWAKYWIVYAFLVTFEVLADVFLSW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy 316 atcctggcaccacagctgcattgcgagtggaggctcccaagctggcaggtggcattgctg 375 bb 239019 ATATTGGCCCGTCTTTGTTCTGCGAGTGGAATGTCACCAAGTTCCAGCAGCCGTC 238960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DE 239139 GATACCTACACTGTTCAGCAGGCGATCAATGCCTTCGGTTTCGGATGGTTTCACGTCAAG 239080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db 239079 CTGTCGCTCTTGGTGGGGGCTCTGCTGGTGTCCGATGCTCATGGAAATGCCCATTCTCAGC 239020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ctgtctgttctcactggcttggattggatggctgatgccatggagatgatgatcctcagc 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               376 acctcggtggtctttgtaggcatgatgtccagctccacgctctggggaaatatctcagac 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gatactttcatggtggaagatgcagtggaagccattggctttggaaaatttcagtggaag 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 300542;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches 106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 89.4; DB 3;
Pred. No. 1.7e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31845. .>33894
/gene="CG5543"
/product="CT17560"
/db_xref="FLYBASE:FBan0005543"
/db_xref="FLYBASE:FBan0034908"
<31845. .>33894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="FLYBASE:FBan0005543"
/db_xref="FLYBASE:FBgn0034908"
31927. .33894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="FLYBASE:FBan0004817"
/db_xref="FLYBASE:FBgn0010278"
complement(<28956. .>31553)
/db_xref="FLYBASE:FBgn0034907"
/protein_id="AAF47063.1"
/db_xref="GI:7291641"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="CT15471"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="CG5543"
/map="60A2-60A2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="CG5543"
/note="CG5543 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="Ssrp"
/note="CG4817"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5.4%;
ilarity 59.1%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                  TGL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     dene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  dene
                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /translation="mRMQLLKKASGYKPFLYNICQSDVCEYLEKRNHPFINIILLSSFG
NRTNVNKCPIPPEIVLEHFRFPVKVLDMMPLPFGDYGLFTTFTFHKSELAQVKVYFTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="FLYBASE:FBan0015800"
/db_xref="FLYBASE:FBqn0034904"
/db_xref="FLYBASE:FBqn0034904"
/db_xref="G1:791639"
/translation="MVRFETRDGRTISVNLALLEKSLVIREMCRVGQVPEDEDFVLPL
/translation="MVRFETRDGRTISVNLALLEKSLVIREMCRVGQVPEDEDFVLPL
/translation="MVRFETRDGRTISVNLALLEKSLVIREMCRVGQVPEDEDFVLPL
/translation="MVRFETRDGRTISVNLALLEKSLVIREMCRVGQVPEDEDFVLPL
/translation="MVRFETRDGRTISVNLALLEKSLVIREMCRVGQVPEDEDFVLPL
/translation="MVRFETRDGRTISVNLALLEKSLVIREMCRVGQVPEDEDFVLPL
/translation="MVRFETRDGRTISVNLALLEKSLVIREMCRVGQVPEDEDFVLPL
/translation="MVRFETRDGRTISVNLALLEKSLVIREMCRVGQVPEDEDFVLPL"
/translation="MVRFETRDGRTISVNLALLEKSLVIREMCRVGQVPETRDGRTISVNLALLEKSLVIREMCRVGQVPETRDGRTISVNLALLEKSLVIREMCRVGQVPETRDGRTISVNLALLEKSLVIREMCRVGQVPETRDGRTISVNLALLEKSLVIREMCRVGQVPTRTDGRTISVNLALLEKSLVIREMCRVGQVPTRTDGRTISVNLALLEKSLVIREMCRVGQVPTRTDGRTISVNLALLEKSLVIREMCRVGQVPTRTDGRTISVNLALLEKSLVIREMCRVGQVPTRTDGRTISVNLALLEKSLVIREMCRVGQVPTRTDGRTISVNLALLEKSLVIREMCRVGQVPTRTDGRTISVNLALLEKSLVIREMCRVGQVPTRTDGRTISVNLALLEKSLVIREMCRVGQVPTRTDGRTISVNLALLEKSLVIREMCRVGQVPTRTDGRTISVNLALLEKSLVIREMCRVGQVPTRTDGRTISVNLALLEKSLVIREMCRVGQVPTRTDGRTISVNLALLEKSLVIREMCRVGQVPTRTDGRTISVNLALLEKSLVIREMCRVGQVPTRTDGRTISVNLALLEKSLVIREMCRVGQVPTRTDGRTISVNLALLEKSLVTRTDGRTISVNLALLEKSLVTRTDGRTISVNLALLEKSLVTRTDGRTISVNLALLEKSLVTRTDGRTISVNLALLEKSLVTRTDGRTISVNLALLEKSLVTRTDGRTISVNLALLEKSLVTRTDGRTISVNLALLEKSLVTRTDGRTISVNLALLEKSLVTRTDGRTISVNLALLEKSLVTRTDGRTISVNLALLEKSLTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
                                                                                                                                                                                                                                              /db_xref="FLYBASE:FBan0011169"
/db_xref="FLYBASE:FBan0034905"
/db_xref="FLYBASE:FBqn0034905"
/db_xref="d1:7291638"
/dr_xref="d1:7291638"
/translation="MSSPLVLFTALLLVSSTICOGLPDLHKQMTPEQIQSVFHVDTHD
/translation="MSSPLVLFTALLLVSSTICOGLPDLHKQMTPEQIQSVFHVDTHD
/translation="MSSPLVLFTALLLVSSTICOGLPDLHKQMTPEQIQSVFHVDTHD
/translation="MSSPLVLFTALLLVSSTICOGLPDLHKQMTPEQIQSSPHATHANPESPSAIKSHNVSFSAFGOHLNUSIRATOGLFKGAPHQLRMWTVGSEPNAT
HGLDLQBTUFBQVSTRYSMSTQLKKIYHKRYY"
//dranslation="MSSPLVBQVSTRYSMSTQLKKIYHKRYY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /wer- vort.
/db_xref="FLYBASE:FBan0013561"
/db_xref="FLYBASE:FBan0034906"
/db_xref="FLYBASE:FBan0034906"
/dv.idence=not_experimenta1
complement(join(26883..27038,27100..27264))
/gene="CG13561"
/note="CG13561"
/dos_taref="FLYBASE:FBan0013561"
/db_xref="FLYBASE:FBan0013561"
/db_xref="FLYBASE:FBan0013561"
/db_xref="TLYBASE:FBan0013561"
/db_xref="TLYBASE:FBan0013561"
/db_xref="TLYBASE:FBan0013561"
/db_xref="TLYBASE:FBan0013561"
/db_xref="TLYBASE:FBan0013561"
/db_xref="TLYBASE:FBan0013561"
/db_xref="TLYBASE:FBan0013561"
/db_xref="TLYBASE:FBan0013561"
/db_xref="TLYBASE:FBan0013561"
/db_xref="TLYBASE:TBan0013561"
                             /db_xref-"FLYBASE:FBgn0034905"
complement(join(8417. .8923,14564. .14635))
/gene="CG11169"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="CG15800"
/product="CT15511"
/db_xref="FLYBASE:FBan0015800"
/db_xref="FLYBASE:FBgn0034904"
complement(-4.3286.:>13760)
/gene="CG15800"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="CTJ7534"
/db_xref="FLYBASE:FBan0005539"
/db_xref="FLYBASE:FBan0034907"
<27379. >28397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="CT32939"
/db_xref="FLYBASE:FBan0013561"
/db_xref="FLYBASE:FBan0034906"
/didence=not_experimental
complement(<26883. .>27264)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="FLYBASE:FBan0005539"
/db_xref="FLYBASE:FBgn0034907"
27558. .28397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="CG5539"
/note="CG5539 gene product"
/codon_start=1
/db_xref="FLYBASE:FBan0005539"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /map="60A1-60A2"
/db_xref="FLYBASE:FBan0015800"
/db_xref="FLYBASE:FBgn0034904"
complement(13287, .13760)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="CG15800"
/note="CG15800 gene product"
                                                                                                                                                                                  /note="CG11169 gene product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /map="60A1-60A2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /map="60A1-60A2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="CG13561"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .>28397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="CG5539"
                                                                                                                                                                                                                                         /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        dene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                        CDS
```

ACCESSION

VERSION KEYWORDS

SOURCE

REFERENCE

MEDLINE AUTHORS REFERENCE

JOURNA

TITLE

RESULT AE001863

g ò

LOCUS

```
/product="peptide ABC transporter, permease protein"
/protein_id="AAF12421.1"
/db_xref="c1:6460716"
/tanslation="MTGGPETHODMAWRRYRKSRPGVIAGWVLIALXVIALLSPFL
APVNITYOHEGYEVORPOTVHLIHQGRLHRPPVYGSTTKRDPVTFAKKTVPDTAHPLP
VQFFVKGEPYSFLGLOSDRHLFGVPDGODEVGETVRPRYFFLCTDOLGRDLFSRTLVG
AGYSMTYGVOVGVLISFALGLLGGVSGYFGGWVDTLIQRVVEVLLSFPRLDILLAAT
LIPARMSTWYTGITVAVLALIGMASLARVYRGOVLARRNLDYVSAQAMGASNLRVI
LRHITPNLSSFILLVTATLALPGYILGESTLSFLGLGIKEPMTSWGLLIRDASKLEVVS
SYPMLIMPGLEVFISVLAFHPRGDALLEDATDGSFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /Lranslation="MLCCHMLNYTLRRILGMIPTLLVISVLCFLVIKLOPGSFIDQYL
EDPRESKETVANITROLGLDOPAWKOYLNWITGVVTRLDFGYSFASGAPVTSIIGERL
GWTVFIAALTLALTWLIAVPLGIYTARNRYGIPAQIANFLGYVGLAIPDFLAALLLLV
LVROLGGTNVGGLFFEDMIDAPWSFAKVLDLLAHLMIPVLAVGLEGYAGLMRORRAST
LDVLSQDYIRTAKAKGLPQGRVIWKHAVRNAINPLISLAGLSLPTLISGTIIISIVWS
COMPLEMENT (5964 . 7804)
/gene="DRAQ10"
/note="This region contains an authentic frame shift and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /translation="MMSNNKTFSELVRKWYGCAVSSPAPLPPEPPAWWVALDPADAAP
AYVQLAQGLRRRIESGELSAGTALPAERELAARLGVSRVTLRQGLGLLEAEGLLRRRR
GSGTFVAGTPHTSRQLGLLSSFSDEVRAQGGVPGARVLSFTQGRPTPQEALSLGLTAA
                                                                                                                                                                                                                                                                                                                                                  ADPOWSAWRROQVTNLVRETALAVKAVKPGVATAĀAT1TYGEGPADEAAFAASRPYAE
VGONELTWYKSGYLDONYMMYKRDPYPLQAGARDOMYTFAGLENGYFHTEOVSGAA
IYLNDIASTYSOITRETOAAGLGWAGYSYRTPDKDVNEGKRGAAEVLADLKLRITDAGG
PFPTFVKHAPLPAASVRGLSGELRAARPGHHSVELVRAGGTWNDVVAATFSDGOGRYG
                                                                                                                                                                                        /trānslation="MNPEVLSPSRLSSVAHALNRASLKEEMMSKSRSLSALLLGALLL
SACGSPENGPQPAPQPLPNPTEEAPGTPSGKVRGLWVDAFGPGIKTPEEVSTLVDTAR
                                                                                                                                                                                                                                                                                                                IRNMYVSVAKNYAVDGIMFDRVRYPDYNPVGGPVQWGYNETALARYRAETGATGTPDP
                                                                                                                                                                                                                                                       AMNVNTLYVQYGRRGDCYCNNAAMPRTDDPEVPAGFDPLADVIAKAHAKDIEVNAWII
TTALWNSVTPPKSAEHAFNTHGPNAAGRDNWLTVKADGTVKAGADWVLDPGHPDAAAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          is not the result of a sequencing artifact; similar to GB:AE000657 percent identity: 51.19; identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="similar to GB:AL009126 percent identity: 60.78; identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="peptide ABC transporter, permease protein"
/protein_id="AAF12420.1"
/db_xref="G1:6460715"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       identity: 66.97; identified by sequence similarity; putatity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="similar to PID:1001492 PID:1001545 percent dentity: 62.93; identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product-"transcriptional regulator, GntR family"
/protein_id="AAF12419.1"
/db_xref="G1:6460714"
sequence similarity; putative"
                          /codon_start=1
/transl_table=11
/product=conserved hypothetical protein"
/proin_id="AAR12422.1"
/db_xref="G1:6460717"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FLNLPQGAFDVRVDGKILLPNVQATPGRVTMLEPITLN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement (4857, .5843)
/gene="DRA0209"
complement (4857, .5843)
/gene="DRA0209"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(3751. .4860)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="DRA0208"
complement(3751..4860)
/gene="DRA0208"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7764. .8603
/gene="DRA0211"
7764. .8603
/gene="DRA0211"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start = 1
      dentified by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KLSTHADLHTDDDAIQQRYQTEVAEVLPQAERASQALTEKLLAVPGYVPGPDFALNYR
RFQDAAALFREANVDLGVTHNQQINRHSVITGNQKVQLGGQELTL+QAKQQMDSPDRA
QREAAWRALSASNAAIAPELDAVMLDLIRTRRQLAHNADEANFRDYRWKELDRVDYTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EQCLDFHASVRDEVVPLLSGLVGDIARQLGLESLRPWDYNRNNLLDPEGRESLRPFAT
GADLEALAQOTYESLDPDLAARFRQMRESGLLDLESRPGKMTHAYCNYFPTTNEPFVL
MNVVGTAEDVRVLFHEVGHAFHGFYSGDRQPLVWNRWSPIEFVEIPSMAMEFLTLDHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MLARACPLRGAGPRSCRPAPSQTCSPGCMEKERRWARLPPMTTO
SNLEAVEHKLMVPADDAQWASYAPEFAALQEADLTAGDVPAWLERWNSLSARLQGSGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SHVFSDDELARYRRKQLEGVIAFLPWAAQMDAFQHWLYAEAPEDVTIADLDAKWLELD
RTFHPFIDWSGLDESVRAKGWHYYHIFQVPFYYIEYAMCYLAAVAIWRAARQDPAAAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        White, C., Eisen, J.A., Heidelberg, J.F., Hickey, E.K., Peterson, J.D., Dodson, R.J., Haft, D.H., Gwinn, M.L., Nelson, W.C., Richardson, D.L., Moffat, K.S., Qin, H., Jiang, L., Pamphile, W., Crosby, M., Shen, M., Vamathevan, J.J., Lam, P., McDonald, L., Utterback, T., Zalewski, C., Makarova, K.S., Aravind, L., Daly, M.J., Fraser, C.M. et, al. Genome sequence of the radioresistant bacterium Deinococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vhite, O., Eisen, J.A., Heidelberg, J.F., Hickey, E.K., Peterson, J.D., White, O., Eisen, J.A., Heidelberg, J.F., Hickey, E.K., Peterson, J.D., Moosoon, R.J., Haft, D.H., Gwinn, M.L., Nelson, W.C., Richardson, D.L., Moffat, K.S., Qin, H., Jiang, L., Pamphile, W., Crosby, M., Shen, M., Vamathevan, J.J., Lam, P., McDonald, L., Utterback, T., Zalewski, C., Makarova, K.S., Aravind, L., Daly, M.J., Minton, K.W., Sheischmann, R.D., Ketchum, K.A., Nelson, K.E., Salzberg, S., Smith, H.O., Venter, J.C. and Fraser, C.M.
             bb 238959 ACAACAGTGGTGTTTTTGGGCATGATGTTGAGTTCCAGTTTTTGGACACAGCGAGC 238900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (02-NOV-1999) The Institute for Genomic Research, 9712 Medical Center Dr. Rockville, MD 20850, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Deinococcus radiodurans.
Deinococcus radiodurans
Bacteria; Thermus/Deinococcus group; Deinococcales; Deinococcus.
1 (bases 1 to 198677)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="similar to GB:AE000520 percent identity: 43.92; identified by sequence similarity; putative" /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="DRA0207"
/note="similar to PID:1653945 percent identity: 49.28;
                                                                                                                                                                                                                                                                                                                                 A BCT 22-NOV-1 section 2 of 2 of the complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GRYKDALRLGNTVSVPELYRAAGAEFRFDREYIRGLMGFLKEQLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product-"oligoendopeptidase F, putative"
/protein_id="AAF12423.1"
/db_xref="G1:6460718"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Deinococcus radiodurans"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          radiodurans R1
Science 286 (5444), 1571-1577 (1999)
20036896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(2005. .3645)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(2005. .3645)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="DRA0206"
complement)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(91. .1926)
/gene="DRA0206"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="taxon:1299"
                                                                                                                                                                                                                                                                                                                                                               R1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="DRA0207"
                                                                                                                                                                    238899 AGATATGGCCGGAAGTCGG 238881
                                                                                                                                                                                                                                                                                                                                                            Deinococcus radiodurans
                                                                                                                                                                                                                                                                                                                                                                                                                                                          G1:6460670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /strain-"R1"
                                                                                                       cagiacggcaggaaaacag 454
                                                                                                                                                                                                                                                                                                                              198677 bp
                                                                                                                                                                                                                                                                                                                                                                                                                        AE001863 AE001825
AE001863.1 GI:64
                                                                                                                                                                                                                                                                                                                                     AE001863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                           436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
```

gene

FEATURES

CDS

CDS

```
none
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HTG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CEK01F9/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                      qq
                                                                                                                                                                                   q
                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                               Dp
                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                            ò
                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                             /product_conserved hypothetical protein"
/product_conserved hypothetical protein"
/product_aconserved hypothetical protein.
/db_xref="GI:6460713"
/db_xref="GI:6460713"
/db_xref="GI:6460713"
/translation="WardpreregovHpDYadLDTLAPDALIAALADDQLGAVRAVQAAA
/translation="WardpreregovHpDYadLDTLAPASGTPTPYLGARGGRAGALT
RAIRGAVEGABDDAGRERDVGANGCPDDVLIAVAGGTTPYLGARGGRAGALT
VGLANNPGAPLLAAVDCPVLLDYGPEIISGSTRLKAGTAGKIALNTLGSALMVRIGKL
YGNLANNPGAPLLAAVDCPVLLDYGPEIISGSTRLKAGTAGKIALNTLGSALMVRIGGG
COMPlement(10796..11398)
/gene="DRAG14"
/complement(10796..11398)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="WGGGLHPRQLGHLDRLSDELMFGFWLNPREVAAFLKGAGLNAAG
LTGMGWGTPHPALGDPAAFAALL.SDNEQARLGDLGVRLVVAHHLTCLTLGAPLLDPND
TERVWQRIEATRPPLFVDEVWAGREDEGA"
EQVYKLKRLKTSDGDPLAVEDSTLPAALJGPLTAQDVTDASLYGLLGGKHLAPAKATK
HLRAQNASAELAHLLGVPLGAALLTTERVSWLASGRPVEYARACYRGDRYDFVMDLRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APQDVIDGQDAWKANIEAMKDVPEATPADLEWAEAIVFSSPTRFGGATSQMRAF1D7TL
GGLWSSGKLANKTFSAMTSAQNVNGGQETTLQTLYMTAMHWGAVLTPPGYTDEVIFKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="DRA0214"
/note="similar to GB:M99166 SP:P30849 PID:148264 GB:U00096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /translation="MTAPVKLAIVFYSSTGTGYAMAQEAAEAGRAAGAEVRLLKVRET
                                                                                                                                                                                                       9857. .10774
/gene="DRA0213"
/note="similar to GB:U00096 SP:P76535 PID:1788768 percent
identity: 63.89; identified by sequence similarity;
putative"
                                                               //orde="This region contains an authentic frame shift and is not the result of a sequencing artifact; similar to GB:L42023 SP:P44861 PID:1005712 PID:1220844 PID:1255011 percent identity: 56.04; identified by sequence similarity; putative"
//gene="DRA0213"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="trp repressor binding protein WrbA, putative"
/protein_id="AAF12417.1"
/db_xref="G1:6460712".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tcatggtggaagatgcagtggaagcattgyctttggaaaatttcagtggaagctglctg 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="similar to GB:U00096 PID:1788770 PID:1799860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PID:1651499 percent identity: 54.36; identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      54.32; identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 198677;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGNPYGASVTANGQPLLENDRASIRHQVRRQVELTAKLLG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           410; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="identified by Glimmer2; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transl_table=11
/product="hypothetical protein"
/protein.id="AAF12499.1"
/db_xref="G1:6460794"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PID:1799864 percent identity: sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 89; I
Pred. No. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="DRA0216"
/2068. 12068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11664. .12059
/gene="DRA0215"
11664. .12059
                                                                                                                                                                                                                                                                                                                                   /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12068. .13069
/gene="DRA0216"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="DRA0215"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         386:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           203
                                                             gene
                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ó
```

```
77290 TCACCGCGACTTTTGCGGGGATGCTGTTCGGGGCGTGGTTCTGGGGGGTATCTGGCCGACC 77349
                                                                                                                                                                                                                                                                                                                                                                                                                        77350 GGGTGGGCCGGCGCGCGTGTTTCTGACGACGGTGGCGCTCGGCGTGGTCTTCGGGCTGG 77409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           77410 cesescectaseseceacetsacetsectactestesecesectatetaacesectre 77469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          77830 CCCCCCTCTCGCCCCCCCAGCTTTTCCCGGGCGTCCTCGCCCGGCCCCACGCCGCTGCTGA 77889
                                                                                                              323 caccacagetgcattgcgagtggaggctcccaagetggcag----gtggcattgctga 376
                                                                                                                                                                                                                                       cctcggtggtctttgtaggcatgatgtccagctccacgctctggggaaatatctcagacc 436
                                                                                                                                                                                                                                                                                                                                                            437 agtacggcaggaaaacagggctgaagatcagcgtgctgtggactctgtactatggcatcc 496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       557 ggatcggaggagttccccagtcgg---tgacgctgtatgccgagttccttcccatgaaag 613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    722 teatecteteagetgteeegeteeteetetttgeegtgetgttttetggetgeetgaaa 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    902 accgaggcaaaatgagggaccttttcacaccccaltttagatggacaactttgctqctgt 961
263 ttctcactggcttggcttggatggctgatgccatggagatgatgatcctcagcatcctgg 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genome sequence of the nematode C. elegans: a platform for investigating biology. The C. elegans Sequencing Consortium Science 282 (5396), 2012-2018 (1998)
                                                     77170 CCATCTGTGGGCTGACCTGGGCCGCCGACGCGATGGAGGTGCTCCTGATGGGCTTCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     782 gigcaaggiatgaigtgcigicagggaaccaggaaaaggcaaicgccaccitaaagagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 842 tagcaactgaaaacggagctcccatgccgctggggaaactcatcatctccagacaggaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        497 ttagtgcatttgcgcccgtgtatagctggatcctggtgctccgggggcctggtgggcttcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   614 ccagagctaaatgtattttgctgattgaggtattctgggccatcgggacagtgttcgagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The C.elegans Sequencing Consortium.
Erratum:[[published errata appear in Science 1999 Jan
1;283(5398):35 and 1999 Mar 26;283(5410):2103 and 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Caenorhabditis elegans cosmid KO1F9, complete sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Caenorhabditis elegans.
Caenorhabditis elegans
Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida;
Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
1 (bases 1 to 19834)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            77890 TGGTGACCTGGTTTGGCTGAGCCTGGGCTACTACGG 77926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ggtttatatggttttccaatgcattctcttactacgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19834 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             222175
222175.1 GI:297971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99069613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CEK01F9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE
REMARK
```

Sep

임

ö

Gaps

.; 0

REFERENCE AUTHORS TITLE JOURNAL

COMMENT

```
Stover, C.K., Pham. X.O., Erwin, A.L., Mizoguchi, S.D., Warrener, P., Stover, C.K., Pham. X.O., Erwin, A.L., Mizoguchi, S.D., Warrener, P., Hickey, M.J., Brinkman, F.S., Hufnagle, W.O., Kowalik, D.J., Lagrou, M., Garber, R.L., Goltry, L., Tolentino, E., Westbrock-Wadman, S., Yuan, Y., Brody, L.L., Couleer, S.N., Folger, R., Kas, A., Labig, K., Lim, R., Smith, K., Spencer, D., Wong, G.K., Wu, Z. and Paulsen, I.T. Complete genome sequence of Pseudomonas aeruginosa PA01, an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="MSRLCLVLLLLCCALPARAQPPAPLDGEDLRLSLGAYAEYYRDA
GGRARLGDILALPAQAFAALRGDHANFGKNAAAWWFRVRLDNRNGADLAGFLEVNYPL
LDDLKVYLLTADGRIEQQESGDLFAFSQRPVQVRNFWFPLRLPPGESTLLLKVQSTST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Stover, C.K., Pham, X. O.T., Erwin, A.L., Mizoguchl, S.D., Warrener, P. Hickey, M.J., Brinkman, F.S.L., Hufnagle, W.O., Kowalik, D.J., Lagrou, M., Garber, R.L., Goltry, L., Tolentino, E., Westbrook Wadman, S., Yuan, Y., Brody, L.L., Coulter, S.N., Folger, K.R., Kas, A., Larbig, K., Lim, R.M., Smith, K.A., Spencer, D.H., Wang, G.K., S., Wu, L., Paulsen, I.T., Reizer, J., Saier, M.H., Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (16-MAY-2000) Department of Medicine and Genetics, University of Washington Genome Center, University Of Washington, Box 352145, Seattle, MA 98195, USA Location/Quallfiers
                                                                                                                                                                                                                                                                                                                              Db 19221 ATATTTCCATTGGAATTTTTATAAATCTATTTGGAGTTTGCAGTTTCACTGTCACTGTG 19162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   $\operatorname{BCT}$ 30-AuG-2000 section 328 of 529 of the complete
                                                                                                                                                                 1225 atcttctccttctgcagcctcctgctgtttatctgtgttggaagaaatgtgctcactctg 1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteria; Proteobacteria; gamma subdivision; Pseudomonadaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product_"probable sensor/response regulator hybrid"
/protein_id="AAG06850.1"
/db_xref="GI:9949605"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1345 cctgaggtctaccccacggcaacgcggggccctcggcctgggcacctgcagcgggcatggca
Length 19834;
                                                                                    85; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db 19041 AGAATTGGAGCAATTGTGACTCCATTTATCGCTCAGGCGA 19002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1405 agagtgggtgctctcatcactccgttcatcgcccaggtga 1444

    10344/organism="Pseudomonas aeruginosa"/strain="PAO1"

        Score 84; DB 3;
Pred. No. 4.9e-11;
                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 opportunistic pathogen
Nature 406 (6799), 959-964 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:287"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AE004767 10344 bp DNA
Pseudomonas aeruginosa PA01,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="PA3462"
100. .2859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="PA3462"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pseudomonas aeruginosa.
Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AE004767 AE004091
AE004767.1 GI:9949604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 10344)
        5.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100. .2859
                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pseudomonas.
                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                genome.
                                                                                         Matches 135;
                Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AE004767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /protein_id="CAA80131.1"
/db_xref="G1:3878108"
/db_xref="SHSS-PROT: P30638"
/translation="WDDKAILTEVLEASNIJEAYVDLTAKOLIKEIRHVGDDFAVRYS
NLODRTELGEPTDQRSPDSEKTFTYDEAVEALGFGRFOLKLSILTGMAWMADAMEMML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LSLISPALACEWGISSYQQALVTTCVFSGMMLSSTFWGKICDFFGRKGLTFSTLVAC
ILGUISGMSPHFYULLFRGLTGFGGGCPGOYTLVAEFLEPTAQRAKCVVLLESFWAI
GAVFEALLAYFWMESFGWRALMFLSSLEDFLGIFAVASFWLFPSARFDWASGHPERALET
LQAAARWNRVQLPTGRLVSSTKAGSESRGDIANLLSPDLRKTTILLMCIWAITAFSYY
GWVLFTTVLFQSHDECHGGLFSNGTQMEVCQPLTRSDYFDLLSTTLAEFPGLIITVLI
IEBFGRKKTMALEYANFRIAFFRLLYFCLDRFYVLLFVARRFISGARQCAYYTPEV
YPTTLRAVGLGTCSAMARIGAIVASEKSLSLPIGIYGTAAILGLIASLSLPIETKGRQ
MMVRLTSEKSSIFSNFFQDSH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The end of this sequence (19655. .19834) overlaps with the start of sequence z111115.
                                                                                         Direct Submission
Submitted (06-APR-1993) Nematode Sequencing Project, Sanger Centre,
Hinxton, Cambridge CB10 1R0, England and Department of Genetics,
Hinxton, Cambridge CB10 1R0, England and Department of Genetics,
Mashington University, St. Louis, MO 63110, USA. E-mail:
jes@sanger.ac.uk or rw@nematode.wustl.edu
Coding Sequences below are predicted from computer analysis, using
predictions from Genefinder (P. Green, U. Washington), and other
available information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       join(complement(211115,1:1418. .1509),
complement(21115,1:188. .1374),
complement(211115,1:186. .746),
complement(211115,1:186. .746),
complement(211115,1:186. .716),
complement(21115,1:188. .427), complement(19292. .19791),
complement(19027. .19177), complement(18703. .18876))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .19791),
                                                                                                                                                                                                                                                                                                                                                                                                 current sequence finishing criteria for the C. elegans genome sequencing consortium are that all bases are either sequenced unambiguously on both strands, or on a single strand with both a dye primer and dye terminator reaction, from distinct subclones. Exceptions are indicated by an explicit note.

IMPORTANT: This sequence is not the entire insert of clone KOIF9. It may be shorter because we only sequence overlapping sections once, or longer because we arrange for a small overlap between eighbouring submissions.

The start of this sequence (1. 200) overlaps with the end of sequence U00026.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="ZK637.1"
/gene="ZK637.1"
/note="predicted using Genefinder
contains similarity to Pfam domain: PF00083 (Sugar (and
other) transporter), Score=321.5, E-value-3.1e-93, N-1;
PF00939 (Sodium:sulfate symporter transmembrane region),
Score=1.3, E-value-3.2, N-1
CDNA EST yk311g8.5 comes from this gene
cDNA EST yk311g8.5 comes from this gene"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       For a graphical representation of this sequence and its analysis see: http://wormbase.sanger.ac.uk/perl/ace/elegans/seq/sequence?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="2K637.1"
join(complement(z11115.1:1418. 1509),
complement(z11115.1:1188. 1374),
complement(z11115.1:188. 1374),
complement(z11115.1:660. 746),
complement(z11115.1:660. 746),
complement(z11115.1:284. 427),
complement(z11115.1:288. 427),
complement(z11115.1:288. 427),
complement(z11115.1:288. 1977),
complement(z11115.1:288. 327),
complement(z1115.1:288. 327),
complement(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .19834
/organism="Caenorhabditis elegans"
/db_xref="taxon:6239"
/chromosome="III"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3638 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3410 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                name=K01F9
```

source

FEATURES

dene

CDS

6733

BASE COUNT ORIGIN

Warrener, P.,

gene

CDS

```
οp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                / LGHIBLA_GASTE-11
/ PICHULCE "CONSERVED HYPOTHETICAL PROTEIN"
/ Product "CONSERVED HYPOTHETICAL PROTEIN"
/ Protein_id="AAGO6883.1"
/ ACLEATE = COI: 9949608
/ TEANSIATION="MAGSYSERHDLPIKPEGOAARPERTGTWAPFSIQAFRIIWICNL FANLGTWAGONFATHLAFFICYLDPYLLISILISGYIFADNHDRRKIM
WINGLESFENTGAMFICYLDFULLISILIMISLGGSYTP FAWGANDROYPARM
VSDAYLLNSWYNYNRAAGFALGGLLLSAVGPAWPELFOSTYMALIWATWOWRRDYP
KRSLPPEGILEGYTAALRFTQYSTYRLWMRSFAFGLSASAWALLPLLAHRNPGD
ATTOTHIGAGGAGGAGGTGSTOWRLUNDWILENGGGONGGALATYNGWOULLYPDMIKARAALALYGGLALGLYDNUWU
FANTYNGGALGGAGTGGATYNGROULLYPDMIKARAALALYGGLALGSFLWGHLAB
THIVHGALLAAGGCLLLASVILLYNSRLPEWDAASISRAPRGQPSFFFRINGWYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="probable ATP-dependent RNA helicase"
/protein_id="AAG0684.1"
/protein_id="949608.1"
/b_xref="61:9949608"
/translation="WHRSPLFSOFPLHERLLKALESLSFSEPTPVQAAAIPKALEGHD
LRVTAQTGSGKTAAFLLLHRLLAEDKPRSLARALILLPTRELAQOTLKEVERFAOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /transl_table=11
/product="hypothetical protein"
/product="hypothetical protein"
/protein_id="AAG06852.1"
/db_xref="G1:9949607"
/translation="MKLLLRCLLLGAWVVSPSLWAWSNHTVGSYLALRELAAIREAPE
VSEPPLEAAERGGAALLDEQERAYARAHIGNYPARPDALRFAAERGGAGDLKQAFL
AALRVNPEIRLALAACHGOPPOOPORPHLKPOEVLVFONLS9WTARRFITLEERCERVA
PLAVLATAADEPDYGHDINLFSDNPGEAGGRYGFGTGPFGDPRFEFSSGAFFHMGFYH
                                                                                                           RSRQAABQARYENBAKSTRIAKWISHIRTPINGVIGMIOLLRDTPIDRGQAAYETTA
SSGSALMSVINDILDYARIESGKLHLERIDFDELLEDTLAFSAQAVEKTLHLHLG
LDRGVPRRLNGDPTRLRQVLANLLSRALKFTAEGHVARYORRFDEGGRERLLYSVSD
SGIGISAQAQKTLFESFSQADSSTTRYKGSGLGLAISRELVQMGGRIEVSSEPGKG
TRENDLPLSPALDAGASADSSTTRYKGSGLGLAISRELVQMGGRIEVSSEPGKG
TRENDLPLSPALDAGABADTLAHALASEDNITLOCLQALLERWGIRVERCL
OPRRLNAYLEDFSAPDLLVLAAPWFGPPSIWLDTLYAQLEGGGRILLLCPPQHCQDLP
PHEGLRILALAQDVAYKALREALLETYRERRRQPGRSSEAAPBERPPDACTILVAEDN
PVNQLVVRGFLAKRGYAVRLAGNGRLALDFYLRDPRGIOILIMDGEMPEMDGFEATHL
IRREERAGGWPWYPIVALTAHILDEHRRAGIEAGMDAYLGKPVDRAELYATLERLLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="conserved hypothetical protein"
/protein_id="AAG06851.1"
/protein_id="AG06851.1"
/dx xxef="G1:9949606"
/translation="MLIPHDLLEADTLNNLLEDFVTREGTDNGDETPLDVRVERARHA
LRRGEAVILFDPESQCQLMLKSEVPAELLRD"
complement(3959. .5284)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EAAVIYSGAPFLARAWPEWRAYOYFGLSRFAFANGHPYWGYRFLGWGMHYIODITOPY
YRTPLFGASTAAMLOMEGKALLGYPPEKQAA TERYARRHTAYPYRKYOFDWIROLIADGR
POPMLJDAYADTRROGAYPAYSPTULBUVVAA ESNARAACDAATDAA IGEMLAARPASAAOD
FSESNOPRPEAHDNAVLNAQLIELIGHFGAHSRNIARAALETEEGGAKE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VSIEYRIPAERTRDFVRAAQPLRRLRLRNGAERWSLFRDVSNPEVWQELFLVDNWIQH
LRMLDRWTLADKIVIDNVTALHAGDGPPQIRHCVSYEASSYDTPLVKSATPPANDEAG
VVLPLYFSTYAASAASQETLMGFNGAFYGVLFGLFCYNLFLFVSLREATYAWY L.:XNL
SLGLFSASFDGLLFKLLPGHVALESAGIYLLMYLSCLVSIQFSRGYLYTRRDFPRLDR
FLRGLLLACVVLLASEPLVGLRAWNVLASLTVMLVSLSLLLAGVHVWRQGLRYGLYI
                                                                                            LAWGALLLSFLVTTAASLGFELFGLFGSSVVKIGMTVELVTLSIGLADRINALKEEGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(3959. .5284)
/gene="PA3464"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(7338. .8678)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="PA3466"
complement(7338. .8678)
/gene="PA3466"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5501. .7216
/gene="PA3465"
/codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5501. .7216
/gene="PA3465"
5501. .7216
                                                                                                                                                                                                                                                                                                                                                                                                                      2911. .3141
/gene="PA3463"
2911. .3141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2911. 3141
/gene="PA3463"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="PA3464"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
```

CDS

```
/translation="MPDARASABERLERLPLSPYHRLVFV11ALAFFFDSMDLAMMTF
LLGSIRAEFGLDSAQGLLASSSFFGWVIGABLSGMLADRFGREWPVGASTVLWGLAS
YLCSTAGDLSBZTFFYRVLLGIGMGMEFP1AOSLLSEM1PASRRGKY1ALMDGFWDLGF
YLCSTAGDLDSLTFYRVLLGIGMGMEFP1AOSLLSEM1PASRRGKY1ALMDGFWDLGF
DIEARVMRSLGLTELPPPLRQPQRERSRPGFFSAFELWSPKRRTLTVWGLWFFAL
LGFYGTFWLASALLQGSGFAVGSVYYTYLISLAGIPGFLCAMLVESWGRKPSCYLM
LLGGGAMAXAYGGTRAVFGGSLALLIGFGLAMPOFFLFGWMAVLYTYTPELVFTSKYNT
SGFASAVGRIGSLLGPLVTGLVALTGGGGAWTLGGGAMAVTYTFELVFTSKRTL
                  RMLDMGFADDVLALANACPAEROTLLFSATHSGAGLNKVIAEVERPOVLRLNOVGEL
NENVRQOVITADDVAHKEOLLOWLLSNETYTRAIVFINTRVSADRLTGRLIANOHKVF
VLHGERDQOKDRKLATERLKGGANKILVATDVAARGELDVSGLDUVINFDMPSGDETVH
FIGRTGRAGAEGLAISLIGHGDMNLMSSVERVLKONFERRNIKELKAAYOGPKKIKAS
GRAAGSKKKKODRKGAAAKPAARRKPAARPKAGPSAVVSADGMAPLKRKKPTAE"
1023
/gene="Paj467"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
TFIKACLITGGEDFKVQGARLRKNPEI I IGTPGRLLEQRNAGNLPLQDI EVLVLDEAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATGCTCGCCGACCGCTTCGGGCGCAAGCCGGTATTCCAGGCCAGCATGCTGTGCGG 9159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATCCCGGCCAGCCGCGCGAAGTACATTGCGCTGATGGACGCTTCTGGCCGCTGGG 9339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTGGCCAGCTACCTGTCCACCCGCGGCACCTCGACAGCCTGACCGGGT 9219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATATCACCGACTGGTCTTCGTGATCATCGCGCTGGCGTTCTTCTTCGACTCGATGGACCT 8979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gacagtgttcgaggtcgtcctggctgtgttcgtgatgcccagcctgggctggcgttggct 719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                geteatecteteagetgteeegeteeteetettgeegtgetgtgtttetggetgeetga 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gatgatecteageatectggcaceacagetgcattgcgagtggaggeteceaagetggca 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ggtggcattgctgacctcggtggtctttgtaggcatgatgtccagctccacgctctgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCGGGCTGCTGGCCTCGAGCTTCTTCGGCATGGTGGTCGGCGGGCCCTGTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         423 aaatatotoagacoagtacggoaggaaaacagggotgaagatoagogtgotgtggactot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cctggtgggcttcgggatcgg...aggagttccccagtcggtgacgctgtatgccgagtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9340 CTTCGTCGCTGCCGGCTGCCTGTCCTACTTCCTGCTGCCGCTGACCGGCTGGCGCAGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCGATGATCATCTCCTGCTCGGCTCGATCAAAGCCGAGTTCGGGCTCGACTCGGCCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gtactatggcatccttagtgcatttgcgcccgtgtatagctggatcctggtgctccgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ccttcccatgaaagccagagctaaatgtatttgctgattgaggtattctgggccatcgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .;
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5.0%; Score 82.8; DB 1; Length 10344; ilarity 47.6%; Pred. No. 1e-10; Conservative 0; Mismatches 302; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9460 GTCG : GCCTGCCTGGAGCAGGCCGGCGGCGCGAACAGGC 9501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      780 aagtgcaaggtatgatgtgctgtcagggaaccaggaaaaggc 821
                                                                                                                                                                                                                                                                                                              /product="probable MFS transporter"
/protein_id="AAG06855.1"
/db_xref="G1:9949610"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1756 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3395 g
                                                                                                                                                                                                                                                                   /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3698 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EELAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Simi
Matches 277;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    543
```

SOURCE

```
685 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                    9517 9616; gap of 100 bp 1018 10417; gap of 100 bp 10418 10417; gap of 100 bp 10418 1122; contig of 710 bp in 1128 11227; gap of 100 bp 11928 11922; contig of 695 bp in 11923 12022; gap of 100 bp 12023 12715; contig of 693 bp in 12716 12815; gap of 100 bp 12716 12815; gap of 100 bp 13519 13618; gap of 100 bp 13519 13519 13618; gap of 100 bp 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15.23: contig of, vo up in 15.223: gap of 100 bp 15.919: contig of 696 bp in 5.929: gap of 100 bp 16.221: gap of 100 bp 17.533: contig of 699 bp in 183.22: contig of 699 bp in 19.220: gap of 100 bp 19.32: contig of 712 bp in 00.32: gap of 100 bp 19.32: contig of 712 bp in 08.35: gap of 100 bp 100.320: gap of 100.320: gap of 100 bp 100.320: gap of 
                                                                         100 bp
of 689 bp
                                                                                                                                                                                                                                                                   100 bp
of 718 bp
100 bp
of 702 bp
                                                                                                                                           100 bp
of 694 bp
                                                                                                                                                                                                           00 bp
709 bp
                                                                                                                                                                                                                                                                                                                                                                8722: contig of 702 bp
8822: gap of 100 bp
9516: contig of 694 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14319 14418: gap of 100 bp
14419 15123: contig of 705 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100 bp
715 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ap of 100 bp:
contig of 668 bp is
ap of 100 bp:
contig of 700 bp is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            441: gap of 100 bp
24741: contig of 700 bp
41: gap of 100 bp
25541: contig of 700 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41: gap of 100 bp
26348: contig of 707 bp
48: gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27069: contig of 621 bp
69: gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23153: contig of 694 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                53: gap of 100 bp 23941: contig of 688 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       contig of 704 bp
p of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ap of 100 bp
contig of 677 bp
ap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       contig of 692 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     p of 100 bp
contig of 698 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100 bp
of 689 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100 bp
                                                                                                                                                                                                           001
                                                                                                                                                                                             6393: gap of 10
7102: contig of
7202: gap of 10
                                                                                                                                                                                                                                                             7202: gap of 10
7920: contig of
8020: gap of 10
                                              contig of
                                                                                                             contig of
                                                                                                                                                                         6293: contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14419 15123; contil
15124 1523; gap of
15224 15919; contil
15920 16019; gap of
1672 16821; gap of
1672 16822 17533; contil
17534 17633; gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           con
3: gap of
28665
                                                                            ): gap of 5499; cor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31131: gap of
31820: con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31920: gap of
32597: con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   32697: gap of
                                                                                                                                     5599: gap of
                                           4710:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22359:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29463:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31031:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30231
                4025:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20835:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26448:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18323 18422:
18423 191
19121 19220:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19220:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22459:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21644:
                                                                            4810:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27169:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28765:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29563:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30331
                                                                                                       4811
5500
5600
6294
6394
7103
7203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20736
20836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RS Birren, B., Linton, L., Nusbaum, C., Lander, E., Abraham, H., Allen, N., Anderson, S., Baldwin, J., Barna, N., Bastlan, V., Beda, F., Anderson, S., Baldwin, J., Barna, N., Bastlan, V., Beda, F., Baldwin, J., Barna, N., Barkett, G., Callins, S., Campopiano, A., Castle, A., Choepel, Y., Colangelo, M., Collins, S., Collymore, A., Cooke, P., DeArellano, K., Dewar K., Diar, J. S., Dodge, S., Domino, M., Doyle, M., Ferreira, P., Fitzhugh, W., Gage, D., Grand-Pherre, N., Grand, G., Hagos, B., Heaford, A., Horton, I., Howland, J.C., Iliev, I., Johnson, R., Jones, C., Kann, L., Karlas, A., Klein, J., LaRocque, K., Landers, T., Lehoczky, J., Levine, R., Lieu, C., Liu, G., Locke, K., Macdonald, P., Marquis, N., McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPherers, N., Mirphy, T., Naylor, J., Norman, C. H., O'Connor, T., O'Donnell, P., O'Neil, D., Olivar, T.M., Oliver, J., Peterson, K., Pierre, N., Fisani, C., Pollara, V., Raymond, C., Kaley, R., Spencer, B., Stange-Thomann, N., Stojanovic, N., Subramanlan, A., Talamas, J., Tesfaye, S., Theodore, J., Tirrell, A., Travers, M., Trigilio, J., Young, G., Zainoun, J., Zimmer, A. and Zody, M., Trigilio, J., Young, G., Zainoun, J., Zimmer, A. and Zody, M., Tiglio, J., Young, G., Zainoun, J., Zimmer, A. and Zody, M. Tiglie, J., Young, G., Zainoun, J., Zimmer, A. and Zody, M. Tiglie, J., Young, G., Zainoun, J., Zimmer, A. and Zody, M. Tiglie, J., Young, G., Zainoun, J., Zimmer, A. and Zody, M. Tiglie, J., Theodore, J., Tirrell, A., Travers, M., Trigilio, J., Young, G., Zainomen, Washington, edu, RepeatMasker:

Nathir A.F.A. & Green, P. (1996-1997)

http://flp.genome.washington.edu/RW/RepeatMasker.html
                                              ACU67757 62204 bp DNA HTG 27-APR-2000
Homo sapiens chromosome 2 clone RP11-423G3 map 2, LOW-PASS SEQUENCE
SAMPLING.
                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Center: Whitehead Institute/ MIT Center for Genome Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequenting reads that have not been assembled into contigs. Runs of N are used to separate the reads and the order in which they appear is completely arbitrary. Low-pass sequence sampling is useful for identifying clones that may be gene-rich and allow overlap relationships among clones to be deduced. However, it should not be assumed that this clone will be sequenced to completion. In the event that the record is updated, the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Center code: WIBR
Web site: http://www.seq.wi.mit.edu
Vortact: sequence_submissions@genome.wi.mit.edu
Center: Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                830: gap of 100 bp 1522: contig of 692 bp in length 1622: gap of 100 bp 2322: contig of 700 bp in length 2422: gap of 100 bp 100 bp 13119: contig of 697 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of 100 bp
contig of 706 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            730: contig of 730 bp in length
                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 62204)
Birren,B., Linton,L., Nusbaum,C. and Lander,E.
Homo sapiens chromosome 2, clone RP11-423G3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NOTE: This record contains 78 individual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Center project name: L9993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          clone name: 423_G_3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9: gap of
3925: con
                                                                                                                                                                                AC067757.1 G1:7651806
HTG: HTGS_PHASE0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3219:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           be preserved.
                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                            AC067757
AC067757.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2323
2423
3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Center
                                                                                                                                                                                                                                                             human.
                                                           LOCUS
DEFINITION
                          AC067757/c
                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                       VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
RESULT
```

```
/product="AGR_C11015"
/product="AGR_C1105"
/product="AGR_G1"
/product="AGR_G1"
/db_xref="G1:15157410"
/db_xref="G1:1515410"
/db_xref="G1:15157410"
/db_xref="G1:15157410"
/db_xref="G1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MSALPFVFTSPYILFGLLALPAIWMLLRLTPPRPKAEVFPPLKI
/translation="MSALPFVFTSPYILFGLAAAVIFALADPVVNPRNNSIAGSGPLVLVVDNS
LATULKREETPSKSPWMLTLLRIAAAVIFALAADPVVNPRNNSIAGSGPLVLVVDNS
WASAPDWERRVATAQALIGDAERADRPVSISFTADAEHDAVSGTTAVALDKLAAKPK
PLVPDRARTABAITEALNGTAPGTLAYIADGVQTAQDESAMRTLASLSPAEFRIVRGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="AGR_C14098p"
/product="AGR_C14098p"
/product="AGR_C1115157409"
/db_xref="G1:15157409"
/db_xref="G1:15157
Agrobacterium tumefaciens strain C58 circular chromosome, section 199 of 254 of the complete sequence. AE008141 AE007869 AE008141.1 GI:15157408
                                                                                                                                                               Agrobacterium tumefaciens.
Agrobacterium tumefaciens
Bacteria; Proteobacteria; alpha subdivision; Rhizoblaceae groun;
Rhizobiaceae; Rhizobium.
                                                                                                                                                                                                                                                                                                                                                                            Gall
                                                                                                                                                                                                                                                                                               Hinkle, G., Slater, S.C. and Goodner, B.
Hinkle, G., Slater, S.C. and Goodner, B.
Hinkle, G., Slater, S.C. and Goodner, B.
Khizobium radiobacter C58), the Causative Agent of Crown (Rhizobium radiobacter C58), the Causative Agent of Crown Obsease in Plants
Upublished
2 (bases 1 to 11286)
2 (bases 1 to 11286)
3 Hinkle, G., Slater, S.C. and Goodner, B.
Birect Submission Cereon Genomics, 45 Sidney Street, Submitted (14-40G-2001) Cereon Genomics, 45 Sidney Street, Cambridge, MA 02139, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Agrobacterium tumefaciens"
/strain="C58"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1159. 2079
/gene="AGR_C_4100"
1159. 2079
/gene="AGR_C_4100"
/note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2076. .4886
/gene="AGR_C_4102"
2076. .4886.
/gene="AGR_C_4102"
/note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unknown conserved protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product-"AGR_C_4102p"
/protein_id-"AAK87997.1"
/db_xref="GI:15157411"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="AGR_C_4098"
/note="(AP001509) BH0731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:358"
118. .1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
1. .11286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="AGR_C_4098"
118. .1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                      DEFINITION
                                                                                                   ACCESSION
VERSION
                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 62204;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100 bp
100 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100 bp ...
100 bp in length
701 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100 bp
if 716 bp in length
100 bp
if 711 bp in length
100 bp
if 704 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               f 701 bp in length
100 bp
f 681 bp in length
100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100 bp
687 bp in length
100 bp
                                                                                                                                                                                                                                                                   100 bp
f 714 bp in length
100 bp
f 705 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            42285: gap of 100 bp
43021: contig of 736 bp in length
43121: gap of 100 bp
43242: contig of 703 bp in length
43924: gap of 100 bp
44631: contig of 707 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               39783 39882: gap of 100 bp
39883 40577: contig of 695 bp in length
40578 40677: gap of 100 bp
40678 41372: contig of 695 bp in length
41373 41472: gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         172: gap of 100 bp 42185: contig of 713 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                               38272: gap of 7 100 bp 38978: contig of 706 bp in length 39078: gap of 100 bp in length 39782: contig of 704 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                  in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     48557 ACTCACCACAGAACTCTTCCAGGCAGGAGATGTCTGCGGCA 48517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1008 actcaccacagaactcttccaggcaggagatgtctgcggca 1048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 81.8; DB 2;
Pred. No. 1.8e-10;
0; Mismatches 12;
                                      33328: contry _ 100 bp
9 33428: gap of 100 bp
no 34132: contig of 704 bp in
100 bp
                                                                                                                                                                                   100 bp
55743: contig of 707 bp in
5843: gap of 100 bp
8557: contig of 714 hr
857: gap of 3734
                                                                                                                                                                                                                                                                                                                                                                                         100 bp
710 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        49545: gap of 100 by
50252: contig of 707 l
50352: gap of 100 by
51034: contig of 682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 44731; gap of 100
2 45447; contig of 7,
8 45547; gap of 100
46258; contig of 7,
9 46358; gap of 10
9 47062; contig of 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 47162: gap of 10
3 47862: contig of 7
3 47962: gap of 10
3 48665: contig of 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        51940: gap of 1
52641: contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54313: gap of 1
55000: contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               48665: contig of
65: gap of 1
49445: contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           contig of
                                                                                                                                                                                                                                                                                                                                                                                                                      ot
                                                                                                                                                                                                                                                                                                                                                               37362: contig of
                                                                                                                                                                                                                                                                                                                                                                                            37462: gap of
38172: contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  54314 55000: cont
55001 55100: gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51134: gap of
51840: cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           53522: gap of 54213: conf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of
                                                                                                                                                                                                               35036: yap of 35743: con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5.0%;
88.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ďq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53422:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l Similarity 88.1
89; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  52741:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               48765:
                                                                                                                                                                                                                                                                         35843:
                                                                                                                                                                                                                                                                                                                                   36657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            47863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            50253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     52642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      38273
38979
39079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        48666
                                                                      32698
33329
33429
34133
                                                                                                                                                                                      34233
34937
35037
35744
                                                                                                                                                                                                                                                                                                         35844
36558
36658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            44632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AE008141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AE008141/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
```

op

ò

g δ

gene

CDS

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            / COROLL_SCALCE_
/ CEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEASIS_LEAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /transl_table=11
/product= AGR_C_4106p"
/product= AGR_C_4106p"
/protein_id="ARKR87999.1"
/db_xref="G1:15157413"
/db_xref="G1:15157413"
/dc_sref="G1:15157413"
/d
                                                                                      GGT.I.RFAGPRIAAARADDPLVPVTLKQGERILGGALSWAEPOPLADFPAFGAFAGWP
KADGILVKROVLAEPTPDLAERTWASLADGTPLVTTRNVEAGRIVLFHVSAEKSWSDL
PISGHFVDMLRRIVOLSKAGGASASARNPAFALPEPFRLLTAFGAMSAEIGTARRELEMR
AGOPPTGFORDPPGLYGTEDGFVALNLLPAGATLRFLDTSAAGVSTTREALGETAKS
LRPALFTAAFMALIADSLIVLFWNGAPRLPKARSATVATLLIALGAFAAMSPTDARA
DDPKFGDEQIFERLDTTHLAYVRTGEDDVORISEQGLOGLSGFLTWRTTLEPGQPVGL
                                                                                                                                                                                                                                                                                                                                                                               DISKDELSFYPITWPVSATAPMPSSAAISRIDAYMRAGGTVLEDTROFFSELDIGAT
SANGERLOAILANIDIPPLEPVPEDHVLTRSFYLLTNFPGRYNGSPLWVESRQGAAKT
TSGLSSSGGGVTPIMITGNDFAGAWAVDAQGAPVLPTVPPDEWQREHAFRSGVNIMMY
TATVEAPFELRNDFARLSIEGVSTAGAЎHLLDDGFRRRRĀALIAGETGNDFQPLLQPI.
YYISRALQPFVDLIPQRQADLAQAIPEILQSNPSVIVMADIGRLPQETYVPLQRWIAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(8888. .9493)
/gene="AGR_C_4108"
/note="probable acetyltransferase VC0655 (imported)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Deinococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /genewatt(7485, .8798)
/genewatte_4107
/note="probable sugar transporter - 1
radiodurans (strain R1)"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="AGR_C_4107"
complement(7485..8700./gene="AGR_C_4107"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="AGR_C_4108"
complement/enc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="AGR_C_4106"
/note="(L25828) ORF 12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MLTGNYKADQVHVPALLERLGQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LAFSALWWREGR"
7017. .7475
/gene="AGR_C_4106"
7017. .7475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4888. .6972
/gene="AGR_C_4105"
4888. .6972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="AGR_C_4105"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
```

gene

CDS

gene

gene

CDS

```
/transl_table=11
/transl_table=11
/product="AGR_C_4108p"
/protein_id="ARR80001.1"
/db_xref="G1:15157415"
/translation="%SHPHSGSFGLFMSKHDLVYLTEDASHDAIIDLINEEAFGPGRH
/translation="%SHPHSGSFGLFMSKHDLVYLTEDASHDAIIDLINEEAFGPGRH
/TRAARIREGOFHDRELSFVCADDGETIASVRMTPVLAGAVKGHMLGPLAVRPSHKNM
GIGRELVRIAIAAARRKGSEAVILIGOPPYYMPLGFEKVAYAALDFPGPVDPNRVLVV
PVGDDVHQRLKGKIGWRKCEAAMPAAAAEDESFEEFLRVYG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FNDLTGSDADYYPRALRAELDALNDVIYDTNNGVYRAGFATTODAYQONAVKVFETL
DMLEDRLKDRRFLFGSEQTEADWRLFTTLVRFDPVYVGHFKCNIKRIHDYPHLTGYLR
DLYQTPGVPDTVDMRHIKEHYYRSHRTINPTGIVPIGPELDLTMAHGREALS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation-"MHFVFLLTRGATLGVRAACFDEKGRIFLVKHTYLPGWYLPGGGV
ERGETLLMALHKEIREEGNLDAASIPELVHVYLNLEGSNRDHVALYRLQVTGTTPKKP
DHEITESGFFELSALPEGLTPATRRRLAELAGEAAIADYW"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="MKIAIIRKIPTRPEQISRPSHSARAGPETHCSMPCGFAASRRAG
RIAKKETIKETYMGMLVEVRAWDVWPOKPETKEHKRSASOFRWYTVAGAVGPSGEG
GFAAKEDRYHLYVERACAMAHRLIFRKLKKLEDLISVSVUDPLMLENGWERVEGER
TPGARQDHLEGSSTLWQVYTKADPTYSGRVTVPVLMDKKRGTIVSNESAEIIRMFNVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gcaggaaaacagggctgaagatcagcgtgctgtggactctgtactatggcatccttagtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCGCCCGCCGGGTGCTGATCGTCACCGTGGCCTGCGATGCGCTGTTCGGCGTGCTTTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      203 tcatggtggaagatgcagtygaagccattgyctttygaaaatttcagtygaagctgtctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8668 CCGCCTCGATTGCCGCGACCTTTGGCCTGACAGTGCCGCAGGCGCTGCAGACGGGAACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tggtctttgtaggcatgatgtccagctccacgctctggggaaatatctcagaccagtacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       catttgcgcccgtgtatagctggatcctggtgctccggggcctggtggttcgggatcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             caccacagetgeattgegagtggaggeteceaagetggeaggtggeattgetgacetegg
                                                                                                                                                                                                                                                                                                                                             /note="HYPOTHETICAL 37.4 KD PROTEIN IN EXUR-TDCC INTERCENIC REGION (0328)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 77; DB 1; Length 11286; pred. No. 3.3e-09; 0; Mismatches 335; Indels 1
cholerae (group Ol strain N16961)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(10764. .11192)
/gene="AGR_C_4111"
complement(10764. .11192)
/gene="AGR_C_4111"
//note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1973 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="AGR_C_4111p"
/protein_id="AAK88003.1"
/db_xref="GI:15157417"
                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="AGR_C_4109p"
/protein_id="AAK88002.1"
/db_xref="GI:15157416"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3294 g
                                                                                                                                                                                                                                                                     /gene="AGR_C_4109"
9586. 10746
/gene="AGR_C_4109"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/trans1_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                           /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 / Match 4.7%;
Local Similarity 48.0%;
Les 320; Conservative C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3769 c
       Vibrio
```

```
Submitted (24-FEB-2000) to the EMBL/GenBank/DDBJ databases.
The Institute for Genomic Research, 9712 Medical Center Dr., Rockville,
20850, USA
                                                                                                                   67333 GCTTACGCTGGAATGGGTTGGGTTGCAGAGGCCATGGAGATGATGCTTCTCTTTCGTT 67392
                                                                                                                                                                                                                                                                                                                                                                                                                                Arabidopsis thaliana chromosome III P1 MGH6 genomic sequence, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lin X., Kaul S., Town C.D., Benito M., Creasy T.H., Haas B., Wu D., Maiti R., Ronning C.M., Koo H., Fujii C.Y., Utterback T.R., Barnstead Bowman C.L., White O., Nierman W.C., Fraser C.M.; "Arabidopsis thaliana chromosome III Pl MGH6 genomic sequence"; Unpublished.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Arabidopsis thaliana (thale cress)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                               giggicitigiaggeatgatgiccagetecacgetetggggaaatateteagaecagtae
                                 gcaccacagotgcattgcgagtggaggctcccaagctggcaggtggcattgctgacctcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Address all correspondence to:at@tigr.org
PI clone MGH6 is from Arabidopsis chromosome III and is near the
molecular marker
                                                                                                                                                                                                                                                                                                                                                                                 02-MAR-2000 (Rel. 62, Created)
02-MAR-2000 (Rel. 62, Last updated, Version 1)
                                                                                                                                                                                                                                                                                    standard; DNA; PLN; 81020 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9LE44.
Q9M7w1.
Q9M7w2.
Q9M7w3.
Q9M7w4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9LDS0.
Q9LDY9.
Q9LDZ8.
Q9LE42.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9LDK4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9LDB0.
Q9LDD1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09LDF8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SPTREMBL, 09LD39, 02
SPTREMBL, 09LDB0, 03
SPTREMBL, 09LDB1, 03
SPTREMBL, 09LDK8, 03
SPTREMBL, 09LDK4, 03
SPTREMBL, 09LDX9, 03
SPTREMBL, 09WWM, 03
SPTREMBL, 09WWW, 03
                                                                                                                                                                                           67513 GGCGCA 67519
                                                                                                                                                                  442 ggcagga 448
                                                                                                                                                                                                                                                                                                                                                   AC024128.1
                                                                                                                                                                                                                                                                                  AC024128
                                                                                                                                                                                                                                                                                                                   AC024128
                                                                                                                                                                                                                                                                                                                                                                                                                                                       sedneuce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1-81020
Lin X.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1-81020
                                                                                                                                                                                                                                                   RESULT 14
                                  322
                                                                                                 382
                                                                                                                                                                                                                                                                 AC024128
ID AC02
                                                              qq
                                                                                                                            qq
                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                    ò
                                                                                                 ò
                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids II; Brassicales; Brassicaceae; Arabidopsis.

1 (sites)
Nakamura, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
Submitted (28-APR-1999) to the DDBJ/EMBL/GenBank databases.
Yasukazu Nakamura, Kazusa DNA Research Institute, Laboratory of
Gene Structure 2; Yana 1532-3, Kisarazu, Chiba 292-0812, Japan
(E-mail:Ynakamu@kazusa.or.jp, Tel:81-438-52-3935(ex.7443),
Fax:81-438-52-3934)
                                                                                   8368 GGCGCTGGCTGTTTTTTTGGAAGGTTTCTGGGCGCTTGGCCACACTGATCGTGCACTGG 8309
                                                                                                                                                      8188 ACCTGCTGCGCACGGGGGGATCCGAAGAAGCCAAGGCCGTCGTGGTGG 8129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Arabidopsis thaliana (strain:Columbia) DNA, clone_lib:Mitsui Pl
clone:MGH6.
                                                                                                                                                                                                  790
                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-MAY-1999
Pl clone: MGH6,
 563 gaggagttececagteggtg---aegetgtatgeegagtteetteecatgaaayeeagag 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ttcatggtggaagatgcagtggaagccattggctttggaaaatttcagtggaagctgtct 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9tteteactggettggettggatggetgatgceatggagatgatgatgetecteageatect 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Structural Analysis of Arabidopsis thaliana Chromosome 3. II Unpublished (1999)
2 (bases 1 to 81020)
Nakamura,Y.
                                                                                                                                   tggctgtg-----ttcgtgatgcccagcctg--ggctggcgttggctgctctct
                   620 ctaaatgtattttgctgattgaggtattctgggccatcgggacagtgttcgaggtcqtcc
                                                                                                                                                                                                   cagetglecegeteetecttlgeeglgetglttletggetgeetgaaaglgeaaggl
                                                                                                                                                                                                                                 8248 CGGCTTTCCCGGCCGTTCTTGGTCTCGGGCTTCGCTTTCTGGTGCCGGAATCGCCGCTCT
                                                                                                                                                                                                                                                                 791 atgatgtgctgtcagggaaccaggaaaaggcaatcgccaccttaaagaggatagcaactg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.5%; Score 74.2; DB 8; Length 81020; 56.3%; Pred. No. 1.7e-08; ive 0; Mismatches 108; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 AB026645 81020 bp DNA PLN Arabidopsis thaliana genomic DNA, chromosome 3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. .81020
/organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /chromosome="3"
/clone="MGH6"
/clone_lib="Mitsui P1"
15544 c 15238 g 25538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /strain="Columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AB026645.1 GI:4757401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complete sequence. AB026645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 4.5
Best Local Similarity 56.3
Matches 139; Conservative
                                                                                                                                                                                                                                                                                                                                                                 8128 TGAACGG 8122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24700 a
                                                                                                                                                                                                                                                                                                                                 aaaacgg 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                   680
                                                                                                                                                                                                                                                                                                                                 851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                202
                                                                                                                                                                                                  731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 1:
AB026645
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ω
                                                                                            QQ
                                                                                                                                                             QQ
                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                 δy
                                                                                                                                                                                                                                                                                              Dp
                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
   ŏ
                               QC
                                                                ò
                                                                                                                            ò
                                                                                                                                                                                         οy
```

Μ.Ε.,

Œ

```
PSTORE IN THE TABLE ARE 15943.1"

/ PROTECT IN THE TABLE ARE 15943.1"

/ Translation="MAGNGMPTLGRVKVCDLVPSEGLPSDSYKLAVTTLSOSIAQYSA
ALIOFPASDGALLRSGLDSARLYFHQRDSYPATHMI HTNUSQEWCKTSGYYADPQSWO
ESYERPELTPEPSNSMEFPPELDIFALLGRAMAVULDAIGFYLNLKSCPFTEILD
BYDERNEEVSSSYLSYCCYARPSFHGAQHHSLTEDBQLILYSDHDHQLDKSILSFWKSD
KAGLHIRDMHGQMILVDVDLGPQEAVYPGLALYQATAGYVSPAVHRTDLNSLQGSIEG
RFSLAFKLMPRATNLSCSEMRAGHGVEAVYPGLALYQATAGYVSPAVHRTDLNSLQGSIEG
RFSLAFKLMPRATNLSCSEMRAGHGVEAVYPGLALYQATAGYVSPAVHRTDLNSLQGSIEG
RFSLAFKLMPRATNLSCSEMRAGHGVEAVPFALLEAQNVLKERVQEIADKKGIKLFFC
BYDFGCENNHNVNNSPCATIRETGWPHGVPFVHPDLPNKAKIGFLETYFEPGWSETHDM
BFSLSETAQGNOHVTNCNHSSPNNTPFPFAFT"
/protein_id="AAF35942.1"
/translation="MASSTGLTVAGALLAGDFRLPAVSSLIPRKTSSSLSCLSNRDLSS
                                          PYNCCWRLSRCK1LTSLSNSRKFAVGKEAEDGFLSNVSEDTDEMFDDLFNKYGKVVFRS
TDVKSPTAEVDDDAESLAFAVELAKVASDVKAGD1KVLFVKPLVYWTRFF11ATAFSRP
Q1DA1GSRMRDLAEKKYGKVANGDVKPNSWTLLDFGDVV1HLFLPPQRTFYNLEDFYGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VTTSVKGGVGEIGEVKATELQSPGGSLVGKQVVKVGRSSGLTTGTVLATALEYNDERGV
CFLTDFLVQBRHRSPFDLEGDSGSLIVMKGEEKARPIGIJWGGTGSRGRLKLKVGECP
ESWTTGVDLGRLLTHLQLDLITTDEGLKAAVQEORAASTTGMSSWADDSSPPVVNLKKE
KRSPEEKLEASLGSPLQVQHIDLERRIETKGGAPSVEHQFPWFFSGQCSASAWPETARED
LVAGFTNGSCDGDLCVGLKLGDDGAKRRTQVTNERMRPAE"
complainent (26470. .26521)
/ fpt_family="(6A)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /protein_id="AAF35944.1"
/protein_id="MPQYGSTQQHCEFTAASYFSWPTSSRLSNAAEERANYFSNLQKEE
DDDDEVSPEPVSTEPKGQRATLLELMITRAFHSKMLRCYSLGTAIGFRIRRGYLTDIP
AIIVPVSRKVHKQWLSPLOCLPFALEGAGIWCDVDVVEFSYFGEPDHQPTPRGYFFTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /protein_id="AAF35945.1"
/translation="MARNKDDIKYATAQAKLSEDEAIRVSYKHGTPLEGGKIAESEPVE
LFSSAQRIEKGKEQSAASGDQTQ1QRDIKDIKGTRTDDSPR"
complement(<31715...>32860)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /translation="MASGCVKNVGTSPSHSWTSSKMSLTRESQPLAPALENEDPUDDFE
FLLEDPVTMLSADELFSDGKLVPLKFSGVTYPEEKPITSVVHTAVKPCRRLEMEISGVV
DPYLFSPRAPRCTVRNRELIGIKRLAKTOQEASASSSRLSSSSPNBKTASFRHFLNRS
SKSTAQQPSHPPGKDSDILESSSTSISSSRLSSSSSGHELDDLPRLSLDLDNKPG
TPNPFARSRAHHHHHLKNQNQPKPRRHTQVDESTESSIESRVMTVTADSPRLNASGKI
VFHULERSSSSPGNFTGGPRMKLHHGMPRSHSANVRITPVLNVPVSSLRSGPKSGLFFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IVDHLQGSDPFIGSGSQVASQETCCTLGAIVRSQTGGRQVGFVTNRHVAVNLDYPSGKM
FHPLPPALGPGVYLGAVERATSFITDDLWFGIFAGTNPETFVRADGAFIPFADDYDI.SR
                                                                                                                           join(complement(21254. .22367),complement(<20664. .21091))
/gene="MGH6.5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .24731),
                                                                                                                                                                                         join(complement(21254. .22298), complement(20664. .21091))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             join(complement(24815. .25204),complement(24582. .24731),complement(24256. .24496),complement(23677. .24177),complement(23184. .23578))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  join(complement(24815. .>25204),complement(24582. .2.complement(24256. .24496),complement(23677. .24177),complement(<a>23184. .23578)</a>)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 81020;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="SPTREMBL:Q9LE44"
/note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref-"SPTREMBL:09LDF8"
                                                                                                                                                                                                                                        /db_xref="SPTREMBL:Q9M7W5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="SPTREMBL:09LD39"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(31715. .32860)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 74.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /protein_id="AAF35946.1"
                                                                                                                                                                                                                                                               /note="unknown protein"
/aene="MGH6.5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="unknown protein"
/gene="MGH6.8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="unknown protein'
/gene="MGH6.6"
                                                                                                                    AMQIELPFEDQSQPRN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="MGH6.6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
                                                                                                                                                                                                                  /codon_start*1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="MGH6.7
26932. .27192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="MGH6.7
                                                                                                                                                                                                                                                                                   /gene="MGH6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="MGH6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                               mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA
                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
. . . . . . . . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .19090,19255. .19381,19476. .19614,19697. .19785,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .19785,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xxef="SPTREMBL:09M7W6"
/note="unknown protein"
/pote="MGH6.1"
/protein_id="AaF35940.1"
/protein_id="MMHERELPFANDTIPGGPTHSNPTPTSLLHAEVWTLCRIFKTVS
/translation="MMHERELPFANDTIPGGPTHSNPTPTSLLHAEVWTLCRIFKTVS
SRKTPPWRELANGKRYGQCSNYGBAYNFGDRESSSSTWYWNVRECKGNYERSVFOL
OQTPYOHONOFILMDTTHVDSFQHFSNDNIHHETYETWPDBELRSVVEPAFPFSFLS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Atranslation-"MAVEAHHLNPLFSSNREMIHPVEASGVVYNTOMRYGTVPTFNPTV
RCQTSIGNPLYNTSPVDRLVHYGAMRTTGSVDSSLTFNBDNNVDFLRPVSSRRSRES
VVLNPSAXMOIOKNPTPDLAMFLGODLSSNVQOHHPDIDRLISNHVBERRRMEIERRKRTG
GRRIVEAVEGGLMKTLRAKDDEINHIGKLNLFLEEKVKSLCVENQIMRDVAGSNEATVN
ALRSNLQOVLAAVERNRWEEPPTVAADDAGGSCGSNDEGDSEERWKLAGEAQDTKKMCR
VGMSMCRSCGKGEASULLLCRRHWCLCSVCGSSLNTCPICKSPKTASLHVNLSS"

COMPLEMENT (13950...14024)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(2496. .2802)
//note="ATTIR16T3A|ATTIR16T3A ATTIR16T3A, a non-autonomous DNA transposon — a consensus."
complement(3046. .3122)
/rpt_family="(GAA)n"
/rpt_family="(GAA)n"
/oin(complement(13663. .>13709), complement(13169. .13565), gene="MGH6.3"
join(complement(13663. .13709), complement(13169. .13565), join(complement(13663. .13709), complement(13169. .13565),
                                                           prediction programs including GRAIL (available by anonymous to prediction programs including GRAIL (available by anonymous troper from arthur.epm.orn.gov), Genefinder (Phil Green, University of Washington), Genscan (Chris Burge Chris Burge) (http://www.cbs.dtu.dk/netpgene/Cbsnetpgene.html), and NetPlantGene Chtp://www.cbs.dtu.dk/netpgene/Cbsnetpgene.html), searches of the complete sequence against a peptide database and the Arabidopsis EST database at TidR (http://www.tigr.org/tdb/at/at.html).

EST database at TidR (http://www.tigr.org/tdb/at/at.html).

Annotated genes are named to indicate the level of evidence for their annotation. Genes with similarity to other proteins are named after the database hits. Genes without significant peptide cantent two gene prediction programs over most of their length are than two gene prediction programs over most of their length are predicted by tRNAscan-SE (Sean Eddy, Chtp://genome.wustl.edu/eddy/tRNAscan-SE/). Simple repeats are definition programs Second Chieff Chilary (http://genome.wustl.edu/eddy/tRNAscan-SE/). Simple repeats are definited by repeatmasker (Arian Smit.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to T7 end of the P1
                                            Genes were identified by a combination of three methods: Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               http://ftp.genome.washington.edu/RM/RepeatMasker.html).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:3702"
/organism="Arabidopsis thaliana"
/cultivar="columbia"
/clone="MGH6"
join(426. 518,645..>1034)
/gene="MGH6.1"
join(426. 518,645..1034)
/codon_start-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="hypothetical protein"
sequence is from SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="SPTREMBL:Q9LDY9"
/note="hypothetical protein"
/gene="MGH6.4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(12513. .13076))
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="SPTREMBL:Q9LDD1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /protein_id="AAF35941.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /rpt_family="(TAAAA)n"
join(<18851. .19090,193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .81020
/chromosome="III"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="MGH6.3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19881. .>20002
/gene="MGH6.4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             join(18851.
19881. .2000
oţ
orientation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
The or clone.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Key
```

õ qq δ a ò qq ò

```
/prodeci__de="Aaf63447.1"
/prodeci__de="Aaf63447.1"
/db_xref="G1:7542435"
/db_xref="G1:7542435"
/db_xref="G1:7542435"
/db_xref="G1:7542435"
/db_xref="G1:7542435"
/db_xref="G1:7542435"
/db_xref="G1:7542435"
/db_xref="G1:7542435"
/db_xref="G1:754245"
/db_xref="G1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="moyfesilkhsnlahldpairtslpmpcorvafvlrehfslmar
Taamdslytanimsatplegvlyvgegaqvmsdigialpvhtglaeldvggldclivc
Ggfryrletarmilraklrodoygcolgglymgyfthardslighdcpchpogrami
Selfpkyrisroahvldbrrmscagassaldmillehggapliravoomlacdbr
Rvmsrapagaaeibeslpkoyrlalelmhaniedpigideiaephoglsrhherlfr
Hvqatppryylelrlharqllqhtrsltevalasgfvsfphfyrrfrelfaiapro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /protein_id="AaF63448.2"
/db_xref="G1:11546053"
/translation="MSGFGFDYLNAMLEDDREKGIYRCKREMFTDPRLFDLEWKHIFEG
/translation="MSGGFDYLNAMLEDDREKGIYRCKREMFTDPRLFDLEWKHIFEG
NWIYLAHESO IPEKNDFLTLFWGROPIFIARNKDGELNACSHRCAMLCRHKRGN
RSSYTCPFHGWTFNNSGKLLKVKDDSNAGYPDSFNCDGSPUDLTKVARFESYRGFLFGS
INADVWFDVFBLGESAKIIDMYDOGSPEGLEVLRGASSYIYEGNWKLTARNGAGYHV
SSYHWNYAATONOMKORRADERTRYMSAGAMAKQGGGFYSPDHGHLLLWTRWANPEDR
PAYERRDQLAADYGQARADWMIENSRNLCLYPNVYLMDQFSSQIRVARPISVNKTEIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DMTGCNPGWGCELVIAHHMKAYDLDKSITVNQGSYFALMADTITRYKEGKPVFYWV
PQWIASVLVEGKDVVWLEVPKTDLPDGKNDVDTTYHGKNLGFAIDKYVAVLNKDFAEK
NPAAVKFLSQVQISTADESNQNLKMQQGEKKPKDIERHAKEWVAAHRQOFDQMLQASR
                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="WYESKFSRSILKCATALTLVAAALGVHASAEKPGDGVKVTPIFP
SIAEERFRGEVAMEGLRELGYKVQEPKETEYGVMMVALANGDADFTVHLMDKLHNQFY
QQAGGDDVMVKTGDILPGVAQGYLIDKKTADQYNIKYITDLKKPEIAKLFDTBGDGKA
                                                                                                                                                                                                                                    /transl_table=11
/product="glycine betaine/L-proline-binding periplasmic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note≃"benABC positive regulator; member of AraC/XylS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="benzoate dioxygenase - alpha subunit"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /transl_table=11
/product="AngR-like transcriptional regulator"
/protein_id="AnF63446.1"
/db_xref="GI:5542434"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="BenA; BenABC alpha subunit; benABC are
                                                                                                                                                      /note="putative ProX-like protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="putative ArgR-like protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4519. .>7472
/note="stop site not determined"
/product="benABC"
                                                                                                                                                                                                                                                                                                                                                                        /protein_id="AAF63445.1"
/db_xref="G1:7542433"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /evidence=experimental
4519. .>7472
/gene="benA"
4549. .5907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /transl_table=11
/product="BenR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cotranscribed"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2123. .3178
/gene="argR"
2123. .3178
/gene="argR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4549. .5907
/gene="benA"
                                                                    1019. .2047
/gene="prox"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="benR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3393. .4349
/gene="benR"
                               'dene="prox"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DAAAQAGK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  family"
                                                                                                                                                                                                                                                                                                                                             protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PETIGEASE PLOCEAU

ADDARFORGED 14-"APES 344 1."

ADDARFORGED 14-"APES 344 1."

ADDARFORGED 15-5542432"

ADDARFORGED 15-5542432"

ADDARFORGED 15-SELGENO ADDARFORD 15-SELD 15-SELGENO ADDARFORD 15-SEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (21-DEC-1999) Microbiology, University of Iowa, 51 Newton Rd., Iowa City, IA 52242, USA
Location/Qualifiers
                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AF218267 13462 bp DNA BCT 05-DEC-2000 Pseudomonas putida glycine betaine/L-proline transport system permease protein (proW) gene, partial dds, glycine betaine/L-proline-binding periplasmic protein (proX), ArgR-like transcriptional regulator (argR) genes, complete dds; benzoate utilization gene cluster, complete sequence; and YhfP-like protein
                                                                                                                                                                                                                                                                                                                                             67273 TTCACGGTGGATGAAGCTCTTGTGGCGATGGGATTTGGCAAGTTCCAAATTTACGTCCTT 67332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gtggtctttgtaggcatgatgtccagctccacgctctggggaaatatctcagaccagtac 441
                                                                                                                                                                                                                                                                                                    gtteteaetggettggettggatggetgatgccatggagatgatgatectcagcateetg 321
                                                                                                                           ttcatggtggaagatgcagtggaagccattggctttggaaaatttcagtggaagctgtct 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteria; Proteobacteria; gamma subdivision; Pseudomonadaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cowles, C.E., Nichols, N.N. and Harwood, C.S.
BenR, a XylS homologue, regulates three different pathways of
aromatic acid degradation in Pseudomonas putida
J. Bacteriol. 182 (22), 6339-6346 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      transport system
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gcaccacagetgcattgcgagtggaggctcccaagetggcaggtggcattgctgacetcg
                                    ;
0
                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="glycine betaine/L-proline
permease protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="prow"
/note="putative ProW-like protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 (bases 1 to 13462)
Cowles, C.E., Nichols, N.N. and Harwood, C.S.
Direct Submission
Pred. No. 1.7e-08;
; Mismatches 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Pseudomonas putida"
/db_xref="taxon:303"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene, partial cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF218267
AF218267.1 GI:7542431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           prow"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 13462)
56.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  putida.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       putida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .13462
                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pseudomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pseudomonas
Pseudomonas
Best Local Similarity
Matches 139; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67513 GGCCGCA 67519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ggcagga 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         205C7802
11053377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF218267
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                        262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          382
                                                                                                                                    202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
```

RESULT

QQ

ò

-

CDS

```
/note="unknown function"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Search completed: March 8, 2002, 04:08:43
                                                                                                                                                                  4.38;
Similarity 46.78;
                                                                                                                                                                    Query Match
Best Local Similarity 46.7
Matches 257; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9063 ACCTGCCAGA 9072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ggctgcctga 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Job time: 16151 sec
                                                                                                                                                                                                                                                                                                8523 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     170
                                                                                                                                                                                                                                                                                                                                                                                                                        353
                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oy
Oy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="mnnrrpggkvalvtgaaggigkgvcwrlkabgaovvavdrselvh
Elagegmltltadleghtdcarvmasavefrgrldilvnnvggtimakpfefyevegi
Earbrrslfptlwcchaalleywlergsgalivnvssiatrgvnrvpygaakggvnalta
ClafetragroirvmrtapggteapprvprnsaegsegekrwyQgivDgtlbsslmhr
YGSIDEQVGAILFLASDEASYITGVTLPVGGGDLG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product-"benzoate transport protein"
/protein_id="AAR63421."
/db_xref="GI:7542440"
/translation="MRTLDVHPIIDNARFTPFHWMVMAWGLLLIFDGYDLFIYGVVL
PVIKEWGFTPLQAGALGSYALFGMMFGALANGSALARIGREKGAIACEAREFSYATIL
NGFASSPSEFGIYRE IAGLGCGGLMPNAVALANNEYARKLRSTLVAIMFSGYSLGGML
SAGVGIFMLPRFGWESMFFAAAVPLLLLPVILYYLPESIGFLVRKGRTEEARALLKRL
                                                                                                                                                                                                                           /product="benzoate dioxygenase - beta subunit"
/product="benzoate dioxygenase - beta subunit"
/protein_id="AaF63449.1"
/db_xref="G1:7542437"
/translation="MSLYRYPETYREARYLDDAQWDQWI.ELYASDASFWMPSWDDDDTLTEDPQSETSLIWYGNRGGI.EDRYFRIKTERSSATVPDTYRISHNISNIEIYEGAEG
SCQVRFNWHTLSFRYKTTDSYFGTSFYTLDLRGEQPLIKAKKVVLKNDYVRQVIDIYH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="MSYQIALNFEDGVTRF1EATGHETVADAAVRQGINIPLDCKDGA
CGTCKCKAESGRYDLGDNF1EDALNEDEJAEGYVLTCOMRAESDCVIRIPASSQLCKT
EQASFEAAISDVRQLSASTIALSIKGEALSRLAFLPGQYVNLKVPGSEQSRAYSFSSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QKGGEVSFLIRNVPGGLMSSFLTNLAKAGDSMSLAGPLGSFYLKPIORPLLLLAGGTG
LAPFTAMLEKIAEQGSEHPLHLIYGVTNDFDLVELDRLQALAARIPNFTYSACVANPD
SQYPQKGYVTQHIEPRHLNDGDVDLYLCGPPPMVEAVSQYVREQGITPANFYYEKFAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DPQCDVQADDVLQAADRKAGGGASVLELFRNGLAIRTLALWLAFFCCLLMVYALSSWL
PKLMANAGYSLGSSLSFLLALNFGGMAGAILGGWLGDRYNLVKVKVAFFIAAALSISL
LGVNSPMPVLYLLIFIAGATTIGTQILLYAGAAQMYGLSVRSTGLGWASGIGRNGAIV
  1YCIAPKGESADARAKRIRQYEDFFNVSGMATPDDLEEFRSCUTGYGGGUTGWNDMSRG
AKHWVEGADEAAREIDLEPLLSGVRTEDEGLFVLQHKYWQDTMIQALKDEQQLIPVVEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="BenC; BenABC ferredoxin reductase component; benABC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product."benzoate dioxygenase - ferredoxin reductase"
/protein_id="AAF63450.1"
/db_xref="GI:7542438"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GPLLGGALMGINLPLQLNFIAFAIPGAIAALAMAVHLASGRRQARAIAAQA'
                                                                                                                                                    /note="BenB; BenABC beta subunit; benABC are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /_note="Benb"
/codon_start=1
/transl_table=11
/product="cis-diol dehydrogenase"
/protein_id="AaR63451.1"
/db_xref="GI:7542439".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           are cotranscribed"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
/transl_table=11
                                                                                                                                                                                                 /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="benE"
9996.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8483. .9814
/gene="benk"
8483. .9814
/gene="benk"
                                                                                                                                                                      cotranscribed"
                                                                                                                                                                                                                                                                                                                                                                              6462. .7472
/gene="benc"
6462. .7472
/gene="benc"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7666. .8427
/gene="benD"
7666. .8427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7666. .8427
/gene="benD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="BenK"
                                                                                      /gene="benB"
                                                                                                          5904. .6389
/gene="benB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9996. .11195
/gene="benE"
                                                                    5904.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
```

```
/translation-"MKTLINDSSLSAIVAGCIATMISYAGPLVIIFHAAEAAGL::HQQ
                                                                                                                                                                                                                                                                                                                                                                         8642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9062
                                                                                                                                                                                                                                                                                  GCTTTACCCCGTTTCACTGGATGATGATGGCCTGGTGCGGCCTGTTGTTGATCTTCGACG 8582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8823 TCTACCGCTTCATTGCCGGCCTGGGCTGTGGCGGCCTGATGCCCCAACGCTGTGGCGCTGA 8882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cgctctggggaaatatctcagaccagtacggcaggaaaacagggctgaagatcagcgtgc 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                473 tgtggactctgtactatggcatccttagtgcatttgcgcccgtgtatagctggatcctgg 532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      709
                                                                                                                                                                                                                                                                                                                                                                                                                      412
                                                                                                                                                                                                                                       233 gettiggaaaatiicagiggaageigleiglicteaciggeiiggeiiggaiggeigaig 292
                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8703 rescentesceascerescesacesacescearesses and rescentescenteres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            533 tgctccggggcctggtgggctcgggatcggagga---gttccccagtcggtgacgctgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gggccatcgggacagtgttcgaggtcgtcctggctgtgttcgtgatgcccagcctgggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ggcgttggctgctcatcctctcagctgtcccgctcctctttgccgtgctgtgtttct
                                                                                                                                                                                                                                                                                                                                   293 ccatggagatyatgatcctcagcatcctggcaccacagctgcattgcgagtggaggctcc
                                                                                                                                                                                                                                                                                                                                                         caagetggcaggtggcattgctgaceteggtggtetttgtaggcatgatgtecageteca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 590 atgeogagitecticecatgaaagecagagetaaatgiattiigetgatigaggiatlet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8643 CCCCGTTGCAGGCCGGCGCGCTGGGCAGTTACGCGCTGTTCGGCATGATGTTCGGCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8883 TGAAUGAGTACGCGCCC.AGCGCTTGCGCAGCACGCTGGTCGCCATCATCATCAGCGGCT
                                                                                                                                                                                             3;
                                                                                                                                                Length 13462;
                                                                                                                                                                                             0; Mismatches 290; Indels
                                                                                                                                                  Score 70; DB 1;
Pred. No. 2.2e-07;
                                   /product="BenE"
/protein_id="AAF63453.1"
/db_xref="G1:7542441"
                  /transl_table=11
/codon_start*1
```

```
Cat flea hindgut a Cat flea HMT synap Cat flea HMT synap Cat flea HMT synap Cat flea HMT synap Rat cerebral organ DNA encoding a pro Human OCTN2 cDNA s Trichoderma reesei
                                                                                                                                                                                                                                 Atherosclerosis-as
DNA encoding a pro
Human EST-derived
Human cDNA encodin
                                                                                                                  DNA encoding a pro
Rat OCT-1 gene. R
Murine organic ani
                                                                                                                                                      Streptococcus olea
Human secreted pro
                                                                                                                                                                                                                                                                                   Human secreted pro
                                                                                                                                                                                                                                                                                                                                                                                      Gene encoding a su
KSHV LUR DNA (nucl
                                                                                                                                                                                         Human OKFX ORF1716
                                                                                                                                                                                                        Human organic cati
Human saccharide-t
                                                                                                                                                                                                                                                                                              Human organic cati
Human 7TM clone H7
                                                                                                                                                                                Stealth virus nucl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; organic cation transporter-like protein; OCTlp; transporter; transmembrane; nootropic; neuroprotective; neuroleptic; anticonvulsant; antiParkinsonian; antidepressant; cellular process; cell proliferation; screen; treatment; prevention; diagnosis; neurodegenerative disorder; Parkinson's; Huntington; ALS; amyotrophic lateral sclerosis; CNS disorder; central nervous system; schizophrenia; depression; behavioural; sleep disorder; eating disorder; Alzheimer's; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human organic cation transporter-like protein (OCTlp) cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ALIGNMENTS
                                                                                                                                                       AAA09469
AAC03955
AAX84352
                                                                                                                                                                                                                                                                                                                       AAH32324
AAF12652
AAZ32202
                                                                                                       AAF15156
AAX26879
AAT08702
                                                                                                                                                                                             AAC76161
AAX58672
                                                                                                                                                                                                                       AAZ46936
AAC85075
                                                                                                                                                                                                                                               AAX26898
AAH98580
                                                                                                                                                                                                                                                                       AAS22844
AA233327
AAX58671
                                                                             AAX26880
AAA09889
                                                                                                                                           AAC83979
                                                                                                                                                                                                                                                                                                                                                                AAA30290
                                                                                                                                                                                                                                                                                                                                                                                                     AAV73805
                                                                                                                                                                                                                                                                                                                                                                                                                             AAF67949
                                                       AAC95400
                                                                                                                                                                                                                                                                                                                                                                            AAF82901
                                                                                                                                                                                                                                                                                                                                                                                      AAA10594
                                                                                                                                                                                                                                                                                                                                                                                                                 AAV19941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
185..1831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product= "OCTlp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA249686 standard; cDNA; 2562 BP
      222222222222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    07-APR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                        10732
32207
137507
484
                                                                                                                                                                     470
6675
1396
11490
11929
2393
2393
2402
710
949
                                                                                                                                                                                                                                                                                                                                                  1960
3489
3489
     549
1590
1590
1875
1875
2191
1831
1831
758
2135
1697
50937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200000633-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      06-JAN-2000
                                                                                                                                                                                                40.2
40
38.6
37.6
37.8
     46.4
46.4
46.4
46.4
46.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAZ49686;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAZ49686
      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                000
                                 υ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human secreted pro
Human brain cell s
P. putida oxygenas
C glutamicum codin
C glutamicum codin
Human liver cell c
Human liver cell c
                                                                                                            (without alignments)
4011.392 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rat organic cation
Human secreted exp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              isola
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human organic cati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5' EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                                                                                                ; Search time 351.36 Seconds
                                                                                                                                                                          1 atggaggaggacttattcca......cgaactctggclctcaggaa
                                                                                                                                                                                                                                                                                                                                                                                      N_Geneseq___IIII:

/ SIDS2/gcgdata/geneseq_geneseq_n/NA1980.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_n/NA1981.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_n/NA1981.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_n/NA1982.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_n/NA1983.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_n/NA1985.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_n/NA1985.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_n/NA1985.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_n/NA1980.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_n/NA1980.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_n/NA1991.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_n/NA1991.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_n/NA1991.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_n/NA1992.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_n/NA1992.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_n/NA1993.DAT::
/ SIDS2/gcgdata/geneseq_geneseq_geneseq_n/NA1999.DAT::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:*/SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:*
                                  Compugen Ltd
                                                                                                                                                                                                                                                                  hits satisfying chosen parameters:
                      GenCore version 4.5
Copyright (c) 1993 - 2000 Comp
                                                                                                                                                                                                                                        930621 seqs, 428662619 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAZ49689
AAA45312
AAZ42410
AAA16697
AAH57556
AAH68313
AAH6833
AAH68534
AAV49558

    nucleic search, using sw model

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAZ49686
                                                                                                March 8, 2002, 02:49:15
                                                                                                                                                                                                     IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ΠD
                                                                                                                                                                                                                                                                                        length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                 N_Geneseq_1101:*
                                                                                                                                                     US-09-911-667A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        222
222
222
122
222
133
134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
3580
4366
2268
1356
309400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1000.0
26.8
21.9
118.0
14.0
44.0
44.0
45.0
33.0
20.8
20.8
20.8
20.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query
```

Potal number of

Searched:

Perfect score:

Title:

Sedneuce:

OM nucleic

...00

Scoring table:

Minimum DB seq Maximum DB seq

..

Database

(MILL-) MILLENNIUM PHARM INC

98US-0107932 99WO-US14880

29-JUN-1999; 30-JUN-1998;

1644 441.2 359.8 295.4 66.2 66.2

Score

Result Š 49 49 46.6

Kaposi's sarcoma-a Nucleotide sequenc

Human olfactory re Aspergillus oryzae Soybean hexose car KSHV long unique c Corynebacterium gl

```
The present sequence is a CDNA encoding human OCT1p (organic cation transporter-like protein), a member of the superfamily of suyar and other transporter molecules that have 12 transmembrane domains.

The sequence is derived from a human foetal brain CDNA library. The protein is highly expressed in brain tissue and has nootropic, neuroprotective, neuroleptic, anticonvulsant, antiParkinsonian, antidepressant activities. The present sequence is used to regulate a variety of cellular processes e.g. cell proliferation, differentiation and survival, screen OCT1p modulators and detect mutation neurodegenerative disorders (e.g. Alzheimer's, Parkinson's, Huntington's and ALS). CNS disorders (e.g. schizophrenia, panic, depression), behavioural, sleep and eating disorders.
                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               664
                                                                                                                                                                                                                                                                                                                                                                                                                  304
                                                                                                                                                                                                                                                                                                                                                                                                                                                            364
                                                                                                                                                                                                                                                                                                                                                                         244
                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ggaaatatctcagaccagtacggcaggaaaacagggctgaagatcagcgtgctgtggact
                                                                                                                                                                                                                                                                                                                                                     ggaaatatctcagaccagtacggcaggaaaacagggctgaagatcagcgtgctgtggact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gecaateceaecgatgataettteatggtggaagatgeagtggaageeattggetttgga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             atgatgatcctcagcatcctggcaccacagctgcattgcgagtggaggctcccaagctgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             atgatgatcctcagcatcctggcaccacagctgcattgcgagtggaggctcccaagctgg
                                                       New nucleic acid encoding human organic cation transporter-like protein, used for prevention, treatment and diagnosis of e.g. neurological, behavioural or sleep disorders
                                                                                                                                                                                                                                                                                                                                .
0
                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                             G; 609 T; 2 other;
                                                                                                                                                                                                                                                                                                            21;
                                                                                                                                                                                                                                                                                                                                .
0
                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                            Score 1644; D. Pred. No. 0; Pred. No. 0; Mismatches
                                                                                                                                                                                                                                                                             Sequence 2562 BP; 520 A; 682 C; 749
                                                                                                                                                                                                                                                                                                            100.0%; 1
100.0%; 1
                                                                                                      Claim 2; Fig 1; 100pp; English
         Ϋ́
                                                                                                                                                                                                                                                                                                                         Best Local Similarity 100.
Matches 1644; Conservative
                             2000-137069/12.
                                        P-PSDB; AAY44633
         AJ,
                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              485
                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                       245
                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                 Oy
Db
                                                                                                                                                                                                                                                                                                                                                                                                                                     ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
δy
                                                                                                                                                                                                                                                                                                                                                                         Q
```

1624 1684 1804 1625 1685 1561 1445 1505 1381 1441 1805 1325 1261 1321 1501 1085 1145 1205 1081 1265 1141 1201 1385 1565 965 1025 1021 901 196 121 781 Dp Oy Oy QQ oy Db Ω g οy g ò Op Óγ Db οy Dp oy Ob Oy Db ò Dp δý qq οy q ò Dp à QQ ò Op οy

540

481

δ

Op

784

725

q

541

ò

```
expressed sequence tag; EST; probe; chemotactic; proliferative; immunomodulatory; haematopoietic; chemokinetic; antibacteria; antifungal; antidiabetic; antiasthmatic; vulnerary; antiparkinsonian; antiviral; antidiabetic; antiasthmatic; vulnerary; antiparkinsonian; antiviral; antidiabetic; antiasthmatic; vulnerary; antiparkinsonian; antiviral; autoimmune disordective; neuroprotective; nootropic; antiparkinsonian; vaccine; autoimmune disorder; multiple sclerosis; allergic condition; insulin dependent diabetes; asthma; myeloid cell deficiency; ulcer; lymphoid cell deficiency; burn; osteoporosis; osteoarthrifis; parkinson's disease; Hutington's disease; caquilation disorder; haemophilia; thrombosis; inflammatory disorder; Crohn's disease;
                                                                                                                                                                                                                                                                                                              1581
                                                                                                                                                                                                                                                                                                                                                                                           1641
                                                                                1401
                                                                                                                                                           1461
                                                                                                                                                                                                                                     1521
                                                                                                                                                                                                                                                                          434
                                                                                                                                                                                                                                                                                                                                                    494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Isolated polynucleotides, and encoded proteins, comprising secreted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mouse; chicken; rat; secreted expressed sequence tag; SEST;
      tacctgactctggcagtttacagtggctgctgcctcctggctgcctggcttct
                                                                                                                                                                                                                                                         ttgcccattgagaccaaaggcggaggactgcaggagtccagccaccgggagtggggccag
                                                                                                                                                                                                                                                                                                                                          acacctgaggtctaccccacggcaacgcgggccctcggcctgggcacctgcagcggcatg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ΰ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Collins-Racie LA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human secreted expressed sequence tag SEQ ID NO:1887.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tumour; infection; depression; psoriasis; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LaVallie ER,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bowman MR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAA45312 St...idard; cDNA; 401 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98US-0104436.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (GEMY ) GENETICS INST INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Treacy M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 McCoy JM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2000-317938/27.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200021991-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-0CT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1642 ga 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20-APR-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Jacobs K, N
Merberg D,
                                                                                      1342
                                                                                                                          255
                                                                                                                                                                 1402
                                                                                                                                                                                                       315
                                                                                                                                                                                                                                           1462
                                                                                                                                                                                                                                                                                375
                                                                                                                                                                                                                                                                                                                      1522
                                                                                                                                                                                                                                                                                                                                                                                                 1582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               555
                                                195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAA45312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                            QQ
                                                                                Š
                                                                                                                      QQ
                                                                                                                                                               ò
                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present sequence is a partial CDNA encoding rat OCTIP (organic cation transporter-like protein) and derived from rat frontal cortex library. It was used to design primers to isolate OCTIP CDNA from human foctal brain cDNA library. Human OCTIP is a member of the superfamily of sugar and other transporter molecules that have 12 transmembrane domains. It is highly expressed in brain tissue and has nootropic, neuroleptic, anticonvulsant, antiParkinsonian, antidepressant activities. The OCT-like protein is used to regulate a variety of cellular processes e.g. cell proliferation differentiation and survival, screen OCTIP modulators and detect mutation in OCTIP gene. OCTIP modulators can be used to treat or prevent chronic neurodegenerative disorders (e.g. Alzheimer's, Parkinson's, huntington's and ALS), CNS disorders (e.g. schlzophrenia, panic, depression), behavioural, sleep and eating disord rs.
                                                                                                                                                                                                 transmembrane; nootropic; neuroprotective; neuroleptic; anticonvulsant, antibarkinsonian; antidepressant; cellular process; cell proliferation; screen; treatment; prevention; diagnosis; neurodegenerative disorder; Alzheimer; Parkinson's; Huntington; ALS; amyotrophic lateral sclerosis; CNS disorder; central nervous system, schizophrenia; depression; behavioural; sleep disorder; eating disorder; rat; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gtcatcttctccttctgcagcctcctgctgtttatctgtgttggaagaaatgtgctcact 1281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1162 cttgtgactctgtggattattgaccgcctgggggcgcaagaagaccatggccctgtgcttt 1221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cttgtgactctgtgggtcatcgaccgcctgggccgcaagaagaccatggctctgtgtttc 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Gaps
                                                                                                                                                                                       organic cation transporter-like protein; OCTlp; transporter;
                                                                                                                                               Rat organic cation transporter-like protein (OCT1p) partial cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New nucleic acid encoding human organic cation transporter-like protein, used for prevention, treatment and diagnosis of e.g. neurological, behavioural or sleep disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 441.2; DB 21; Length 1906;
Pred. No. 3.4e-116;
); Mismatches 63; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1906 BP; 379 A; 547 C; 556 G; 424 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Disclosure; Fig 4; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                AAZ49689 standard; cDNA; 1906 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26.8%;
88.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (MILL-) MILLENNIUM PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98US-0107932.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Goodearl AJ, Glucksmann MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US14880
                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-137069/12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                  WO200000633-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-JUN-1999;
                                                                                                              07-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                         06-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 479;
                                                                                                                                                                                                                                                                                                                                              Rattus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                            AAZ49689;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                135
                  AAZ49689
```

qq ò g

q ò

```
a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                       chemokinetic; analgesic; haemostatic; thrombolytic; antiinflammatory; chemokinetic; antibacterial; antifungal; antiinflammatory; cytostatic; antibacterial; antifungal; antiviral; antiinflammatory; cytostatic; antibacterial; antifungal; antiviral; antidabetic; antibacterial; antiblesy; osteopathic; neuroprotective; contropic; antiparkinsonian; antipacriatic; cerebroprotective; anticonvulsant; and antidepressant. The SESTS can be used for gene thereopy and in vaccines. The SESTS are useful as probes for the identification and isolation of full-length conded by the SESTS are useful in assays for determining biological activity and raising antipodies. They may be useful for treatment of autoimmune disorders (multiple sclerosis, insulin dependent diabetes), allergic conditions of seteoporosis, osteoporathitis, central nervous system disorders (steoporosis, osteoporathitis, central nervous system disorders (champoners, pacterial, fungal or viral infections, depression and disease), tumours, bacterial, fungal or viral infections, depression and pactanes and pacterial, fungal or viral infections, depression and pactanes (astemporasis).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tgggcacctgcagcggcatggcaagagtggtgctctcatcactccgttcatcgcccagg 1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1502 ctgccctggcctcctgctttttgcccattgagaccaaaggcggaggactgcaggaqtcca 1561
expressed sequence tags (sESTs), useful for treating various disorders such as autoimmune, infectious, and central nervous system disorders \cdot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1202 agaccatggccctgtgctttgtcatcttctccttctgcagcctcctgctgtttatctgtg 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tgatgctggaatcctctgtgtacctgactctggcagtttacagtggctgctgctcctgg 1501
                                                                       to AAA45925 represent specifically claimed secreted expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1262 ttggaagaaatgtgctcactctgttactcttcattgcaagagcgtttatttctggaggct 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      211 tgggcacctgcagcggcatggcaagagtgggtgctctcatcactccgttcatcgcccagg 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence tags (SESTS), isolated from human, mouse, chicken and rat tissue sources. The SESTS can have a range of activities depending on the tissues they were isolated from. The activities include: chemotactic; proliferative; immunomodulatory; haematopoietic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                271 tgatgctggaatcctctgtgtacctgactctggcagtttacagtggctgctgcctcctgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 21; Length 401;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21.9%; Score 359.8; DB 21; Length 98.1%; Pred. No. 3.3e-93; ive 0; Mismatches 7; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 401 BP; 69 A; 119 C; 104 G; 109 T; 0 other;
                                           Claim 1; Page 679; 803pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAZ42410 standard; cDNA; 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-FEB-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 70.1
Matches 364; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1562 gccaccgggag 1572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      391 agccactcgag 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAZ42410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAZ42410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
    ò
```

```
Sequences, corresponding to human secreted proteins. AAY6451 to sequences, corresponding to human secreted proteins. AAY6451 to AAX4225 to AAX438 represent the EST-related proteins corresponding to AAX4225 to AAX43052. The 5' ESTS can be used for producing secreted human gene products. They can be used for identify and isolate 5' untranslated regions (HTRS) and uppstream regulatory regions which control the coations (HTRS) and uppstream regulatory regions which control the coations (HTRS) and uppstream regulatory regions which control the chrossome mapping, and to obtain full length cDNA clones. The ESTS can also be used in forensic procedures to identify individuals, or in diagnostic procedures to identify individuals, or in the case therapy protocols. The nucleic acids encoding signal peptides can be used for directing extracellular secretion of a polypeptide into a membrane, or importing a polypeptide into a cell. The proteins encoded by the EST sequences may be useful in treating a variety of human conditions. Secreted proteins have into a cell. The proteins encoded by the EST sequences may be useful in treating a variety of human conditions. Secreted proteins have charached in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        in
be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel secreted protein 5' expressed sequence tag sequences used in diagnostic, forensic, gene therapy, and chromosome mapping procedures
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                          Human; 5' EST; expressed sequence tag; secreted protein; diagnosis; gene therapy; chromosome mapping; upstream regulatory sequence; forensic; location; development; protein synthesis; stability;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 gtccacgtgggcctagaggctgtggagctggatgatgatggggcagctgtgcccaaggagttt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       286 giccacgigggcciagaggcigiggagciggatgatgagggcakcigigcccaaggagtit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 atggaggagttattccagctaaggcagctgccggttgtgaaattccgtcgcacaggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 gagagtgcaaggtcagaggacgacacggcttcaggagagcatgaagtccagattgaaggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18.0%; Score 295.4; DB 21; Length 480; 98.4%; Pred. No. 1.1e-74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.1e-74;
-hac 0; Indels
Human 5' EST isolated from a cDNA library SEQ ID NO:169.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 480 BP; 102 A; 115 C; 154 G; 100 T; 9 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Duclert A, Giordano J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 1; Page 265-266; 837pp; English.
                                                                                                                                                                 regulation; identification; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                 99WO-1B00712.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0057719.
98US-0069047.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 304; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dumas Milne Edwards J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-038446/03.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P-PSDB; AAY64796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (GEST ) GENSET.
                                                                                                                                                                                                                                                                                                      WO9953051-A2.
                                                                                                                                                                                                                                        domo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                 09-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09-APR-1998;
28-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                       21-OCT-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               346
```

ij

us-09-911-667a-3.rng

q

ô 쇰 ò

```
10-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAH57556;
                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ٥
                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAH57556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                     음
                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
ò
                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAA16618 to AAA16697 encode the human secreted proteins given in AAY94898 to AAY94980, isolated from human adult brain, adult thyroid, adult retina, foetal carcinoma, adult belood, adult neural, foetal kidney, adult placenta, adult testis, whole embryo, adult cartilage, kidney, foetal brain, adult thymus, foetal placenta, adult uterus, adult tumour, and adult biadder, cDNA ilbraries. The polynucleotides and proteins are predicted to have biological activities which would make them suitable for treating, preventing or ameliorating medical conditions in humans
                                                                                                                                                                                                                                          Human; secreted protein; immunestimulant; immunesuppressant; virucide; antibacterial; antifungal; cytostatic; antiinflammatory; dermatological; antidabetic; antiasthmatic; antiarthreumatic; proteozoacide; antidabetic; antiasthmatic; antimorphic; proteozoacide; antityroid; immune deficiency; severe combined immunedeficiency; SCID; infection; HIV; hepatitis; malaria; autoimmune disorder; systemic lupus; connective tissue disease; multiple sclerosis; erythematosis; rheumation; asthma; Guillain-Barre syndrome; autoimmune thyroiditis; myasthenia gravis; insulin dependent diabetes mellitus; graft-versus-host-disease; autoimmune inflammatory eye disease; allergy; ss.
                                                                                                                                                                                                                       Human secreted protein clone as180_1 nucleotide sequence SEQ ID NO:159.
                                      464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Collins-Racie LA, Evans C;
Steininger RJ, Spaulding V;
              New polynucleotides encoding secreted proteins, which may have nutritional, chemokine, immune stimulating or suppressing, hematopoiesis regulating, tissue growth, activin/inhibin antiinflammatory or tumor inhibition activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 168; Page 613-614; 641pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             M, LaVallie ER,
M, Agostino MJ,
, Fechtel K;
                                                                                                                                                  AAA16697 standard; cDNA; 3580 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0105368.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0096622.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0099229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99US-0119931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99US-0120575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0132020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99us-0096622
                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US18298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INC.
                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (GEMY ) GENETICS INST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MCCOy JM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              D, Treacy M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000-205979/18
                                                                                        465 atgatgate 473
                                                                  atgatgatc 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P-PSDB; AAY94977
                                                                                                                                                                                                                                                                                                                                                                                                             WO200009552-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23-OCT-1998;
08-JAN-1999;
12-FEB-1999;
18-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            13-AUG-1999;
                                                                                                                                                                                                     16-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-AUG-1998;
04-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30-APR-1999;
11-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                     24-FEB-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-AUG-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Jacobs K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wong GG,
                                                                                                                                                                               AAA16697;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Merberg
                                                                                                                               'n
                                                                                                                                                                                                                                                                                                                                                                                        Homo
                                                                  301
                                                                                                                                         AAA16697
```

```
and animals. The polynucleotides can be used as markers for tissues in which the protein is preferentially expressed, as molecular weight markers on Southern gels, and as chromosome markers or tags to identify chromosomes or to read to inthe conditions or tags to identify as chromosomes or to read to the combined treatment of immune deficiencies and disorders, such as severe combined immune deficiency (SCID), as well as viral, bacterial, fungal and other infections. These infections include human immunodeficiency virus (HIV), condidiasis. The proteins can be used to treat autoimmune disorders such as connective tissue disease, multiple sclerosis, systemic lupus erythematosis, rheumatoid arthritis, autoimmune pulmonary inflammation, erythematosis, rheumatoid arthritis, autoimmune pulmonary inflammation, diabetes mellituus, myasthenia gravis, graft-versus-host-disease and cautoimmune inflammatory eye disease. The proteins can also be used to treat allergic conditions, such asthma. AAA16698 to AAA16774 represent treat allergic conditions, such asthma from the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               411 cacgetetggggaaatateteagaceagtacgyeaggaaaaceagggetgaagateagegt 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; tissue specific; diagnosis; brain; heart; skeletal muscle;
lung; liver; uterus; ovary; stomach; intestine; kidney; pancreas; ss;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           351 occaagetggcaggtggcattgctgacctcggtggtctttgtaggcatgatgtccagctc 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             864 tttctccgagtttctggcccaggagaaacgaggggagcatttgagctggctctgcatgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 624 gtccgactccaacaaaggcatgctaggcctcatcgtctacctgggcatgatggtggagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   531 ggtgctccgggggcctggtgggcttcgggatcggagg---agttccccagtcggtgacgct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 804 ettetgeegeetaetttetggggttgggattggagggteeateeeattgtetteteeta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   648 ctgggccatcgggacagtgttcgaggtcgtcctggctgtgttcgtgatgcccagcctggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                471 gctgtggactctgtactatggcatccttagtgcatttgcgcccgtgtatagctggatcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gtatgccgagttccttcccatgaaagccagagctaaatgtatttgctgattgaygtatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         564 cggtgtggaggtctttgtgggtgggcttcgtgctgcccagcgctgagaaagacatgtgcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         684 etteetetggggaggtetggelgaceggelgggteggaggeagtgtetgeteateteget
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             744 etcagicaacagegicticgecticiteteatetitigiceagggitacggeactificei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             504 tggccacggccgcttccagtggacactgtattttgtgctttggtctggcgctgatgyctga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tgccatggagatgatgatcctcagcatcctggcaccacagctgcattgcgagtggaggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 3580;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 3580 BP; 734 A; 942 C; 1024 G; 880 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human brain cell specific cDNA sequence SEQ ID NO:396.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 66.2; DB 21;
Pred. No. 1.6e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches 258;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAH57556 standard; cDNA; 4366 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.0%;
Local Similarity 47.3%;
les 234; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ctggcgttggctgct 722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 984 giggagitticagai 998
```

```
sequences (1). (1) can have cytostatic, immunomodulatory and neuroprotective activities, and can be used in gene therapy. (1) and proteins (11) encoded by then are used in high throughput screening assays to select DNA molecules, RNA molecules, peptide nu' clic acids, mimetics, peptides, proteins, agonists, antagonists, antibudies or their fragments, immunoglobulins, inhibitors, drug compounds and pharmaceutical agents. Expression of (1) in a sample indicates the differentiation of embryonic stem cells into a tissue selected from tissues. (1) and (11) are used to produce an expression profile that defines a metabolic or developmental process, treatment, condition, clisaese or disorder. The gene profile can be used for diagnosis, prognosis or monitoring of treatments and for investigating a predisposition to a disorder. Where the gene is associated with a cancer, immunopathology or neuropathology.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1151 ctcagtcaacagcgtcttcgccttcttctcatctttgtccagggttacggcactttcct 1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1211 cttctgccgcctactttctgggggttgggattggaggtccatccccattgtcttctccta 1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       971 cggtgtgggggtctttgtgggggcttcgtgctgcccagcgctgagaaagacatgtgcct 1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     metabolic disease; developmental disease; cytostatic; immunomodulatory; neuroprotective; gene therapy; cancer; immunopathology; neuropathology.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAH57161 to AAH57576 represent cell and tissue specific polynucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ggtgctccggggcctggtgggcttcgggatcggagg---agttccccagtcggtgacgct 587
                                                                                                                                                                                                                                                                                                                                                                                New cell and tissue specific polynucleotides useful for diagnosis, prognosis or monitoring of treatments for disorders where the gene is associated with a cancer, immunopathology or neuropathology .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3; Caps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  351 occaagotggcaggtggcattgctgacctcggtggtctttgtaggcatgatgtccagctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       291 tgccatggagatgatgatcctcagcatcctggcaccacagctgcattgcgagtggaggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1031 gtccgactccaacaaaggcatgctaggcctcatcgtctacctgggcatgatggtgggagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               411 cacgetetggggaaatateteagaeeagtaeggeaggaaaaeeagggetgaagateagegt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              getgiggactetgiactaiggeatectiagtgeattigegeeegtgiatagetggateet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 4.0%; Score 66.2; DB 22; Length 4366; Best Local Similarity 47.3%; Pred. No. 1.8e-08; Matches 234; Conservative 0; Mismatches 258; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 4366 BP; 916 A; 1187 C; 1195 G; 1068 T; 0 other;
                                                                                                                                                                                                                                                                                                         Seilhamer JJ, Watson GA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 1; Page 309-310; 327pp; English.
                                                                                                                                                                                     02-NOV-2000; 2000WO-US30396
                                                                                                                                                                                                                              99US-0163508
                                                                                                                                                                                                                                                                  (INCY -) INCYTE GENOMICS INC
                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-291057/30.
                                                                                                        WO200132927-A2.
                                                                    Homo sapiens.
                                                                                                                                                                                                                              04 - NOV - 1999;
                                                                                                                                                                                                                                                                                                             Sornasse T,
                                                                                                                                                 10-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

ď

```
Latinvention describes invertibles invertibles invention also describes (1) recombinant expression vectors containing (1); (2) describes (1) recombinant expression vectors containing (1); (2) production and eukaryotic cells transformed or transfected with (1) or the vector of (1); (3) production of oxygenases by culturing cells of the vector of (1); (3) production of oxygenases by culturing cells of proteins or peptides with the same sequences; (5) mono- or poly-clonal activities (Ab) specific for (1); (6) hybridoma cells that produce antibodies (Ab) specific for (1); (6) hybridoma cells that produce compounds (1) expression of antibodies (Ab) specific for (1); (6) hybridoma cells that produce recombinant oxygenases; (1) useful as probes and primers for detection, recombinant oxygenases; (1) useful as probes and primers for detection, recombinant oxygenases; (1) useful as probes and primers for detection, conduction of amino acids, vitamins, steroids, oxidized aromatic compounds, optically active epoxides, dialcohds, dialdehydes and diarbayles and compounds, optically active epoxides, dialcohds, dialdehydes and diarbayles acids. The transformed cells that express them are used for dicarboxylic acids. The transformed cells that express them are used for bloconversion of aromatic and alighbatic compounds. The oxygenases have been weak substrate specificity so can be used for highly stereo- or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This invention describes novel DNA sequences (I) that express products
                                 1271 titciccgagittciggcccaggagaaacgagggagcattigagctggctctgcaigt 1330
                                                                                                for production of
                                                                           707
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Oxygenase; transgenic plant; detection; amino acid production; vitamin production; steroid production; dialcohol production; oxidized aromalic compound production; dialdehyde production; optically active epoxide production; dicarboxylic acid production; bioconversion; ORF04677; ds.
588 gratgocgagttocttoccatgaaagocagagotaaatgtatttgotgattgaggtatt
                                                                             ctgggccatcgggacagtgttcgaggtcgtcctggctgtgttcgtgatgcccagcctggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              J, Duesterhoeft A;
Heim S;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New DNA encoding a bacterial oxygenase, useful e.g. for amino acids or vitamins, also derived transgenic plants
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , Hoheisel J,
Straetz M, He
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (QUIA-) QUIAGEN GMBH.
(GBFB.) GES BIOTECHNOLOGISCHE FORSCHUNG MBH.
(DRFZ.) DEZZ DEUT KREBSPORSCHUNGSZENTEUM.
(MEDI-) MEDIZINISCHE HOCHSCHULE HANNOVER.
                                                                                                                                                                                                                                                                                                                                                                                                                      P. putida oxygenase encoding DNA ORF04677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 3a; Page 35-36; 47pp; German.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tuemmler B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Moore E,
                                                                                                                                                                                                                                                                                                      AAF26353 standard; DNA; 2268 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TIGR-) TIGR INST GENOMIC RES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99DE-1035087.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-JUL-2000; 2000WO-EP07244.
                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                    ctggcgttggctgct 722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Venter C,
Timmis KN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2001-168556/17.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pseudomonas putida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200107629-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                    02-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Fraser CM,
                                                                                                                                                                                                                                                                                                                                                AAF26353;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hilbert
                                                                                      648
                                                                                                                                                                    708
                                                                                                                                                                                                                                                                                       AAF26353
                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                            q
                                              q
                                                                                                                              g
                                                                                        ò
```

```
RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
ä
regio-specific oxidations of a wide range of substrates, reactions that are difficult or impossible to do with conventional oxidizing agents.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            attcgctgggcggcatgtcggcaggtgtcggcatcttcatgctgccgcgttttggct 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ggcgttggctgctcatcctctcagctgtcccgctcctctttgccgtgctgtgttct 769
                                                                                                                                                                                                                                                                                                                                                                                 tctaccgcttcatcgccggcctgggctgtggcggcctgatgcccaacgccgtggcactga 400
                                                                                                                                                                                                                                                            egetetggggaaatateteagaceagtaeggeaggaaaaeagggetgaagateagegtge 472
                                                                                                                                                                ccatggagatgatgatcctcagcatcctggcaccacagctgcattgcgagtggaggctcc 352
                                                                                                                                                                                                                                      ecceptigeaggetggtgeactgggeagetaigegetgiteggeatgatgtteggegeee 220
                                                                                                                   233 gctltggaaaatttcagtggaagctgtctgttctcactggcttggcttggalggctgalg 292
                                                                                                                                         getttaccccgittcactggatggtcatggcctggtgcggcctgctgctgattttcgacg 100
                                                                                             Caps
                                                                                                                                                                                        gctatgacctgltcatctacgglgtgtggtactgccggtcatcatgaaagaglggggcctga
                                                                                                                                                                                                                                                                                    221 tggccttcggcagcctggccgaccgcatcgggcgcaagaagggcattgccatctgttcg
                                                                                                                                                                                                                                                                                                                                 cettgitetegggggggggecaiceicaaiggettigecageaacecgagegattiggea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tgctccggggcctggtgggcttcgggatcggaggtt--ccccagtcggtgacgctgt
                                                                                                                                                                                                                                                                                                                                                                                                          atgeegagtteetteecatgaaageeagagetaaatgtattttgetgattgaggtattet
                                                                                                                                                                                                                                                                                                            473 tgtggactctgtactatggcatccttagtgcatttgcgcccgtgtatagctggatcctgg
                                                                                                                                                                                                                                                                                                                                                                                                                                 401 igaacgaatacgcacccaagcgcctgcgcagcacgctggtggcgatcatgitcagtggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                         650 gggccatcgggacagtgttcgaggtcgtcctggctgtgttcgtgatgcccagcctgggct
                                                                                                                                                                                                               caagciggcaggiggcatigcigaccicggiggictitgiaggcalgaigtccaycicca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Coryneform bacterium; amino acid synthesis; vitamin; saccharide; organic acid synthesis; ds.
                                                                                             <u>ښ</u>
                                                                    Length 2268;
                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          glutamicum coding sequence fragment SEQ ID NO: 3348.
                                  Sequence 2268 BP; 371 A; 713 C; 732 G; 450 T; 2 other;
                                                                    Query Match 3.8%; Score 63; DB 22; L Best Local Similarity 45.9%; Pred. No. 1.1e-07; Matches 253; Conservative 0; Mismatches 295;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAH68313 standard; DNA; 1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18-DEC-2000; 2000EP-0127688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99JP-0377484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Corynebacterium glutamicum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-SEP-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ggctgcctgaa 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            581 acctgcctgaa 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EP1108790-A2
                                                                                                                                                                                                                                                                                                                                                                                                           590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      710
                                                                                                                                                                                                                                                                                                                                                              533
                                                                                                                                                                                                                                                                                                                                                                                     341
                                                                                                                                                                      293
                                                                                                                                                                                                                                                                                                                                      281
                                                                                                                                             4.1
                                                                                                                                                                                            101
                                                                                                                                                                                                                    353
                                                                                                                                                                                                                                         161
                                                                                                                                                                                                                                                                 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
AAH68313
                are
                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                               δλ
                                                                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                             qq
                                                                                                                                                                                         g
                                                                                                                                                                                                                                        g
                                                                                                                                                                      ò
                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                ò
     SSXS
```

```
The present invention provides a number of nucleotide and protein sequences from the Coryneform bacterium Corynebacterium glutamicum. These are useful for identifying the mutation point of a gene derived from a mutant of coryneform bacterium, measuring expression amount and analysing the expression profile or expression pattern of a gene derived from Coryneform bacterium, and identifying a homologue of a gene derived from coryneform bacterium. Coryneform bacteria are useful for producing amino acids, nucleic acids, vitamins, saccharides and organic acids, particularly L-lysine. The present quence is a nucleic acid described in the exemplification of the invention.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from the
                                                                                                                                                                                                                                                                                                        Novel polynucleotides derived from Coryneform bacteria, for identifying mutation point of a gene, measuring expression of a gene, analysing expression profile or pattern of a gene and identifying homologous gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      289 gatgccatggagatgatgatcctcagcatcctggcaccacagctgcattgcgagtggagg 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                     Ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gtgctgtggactctgtactatggcatccttagtgcatttgcgcccgtgtatagctggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         364 gigetgatteteteteteteaceaigeigtgegittgetecaaacecaigggigtie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   646 ttctggggccatcgggacagtgttcgaggtcgtcctggctgtgttcgtgatgcccagcctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              349 eteceaagetggeaggtggeattgetgaceteggtggtetttgtaggeatgatgteeage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            244 ttaagetetgeaacgetgggeaccateggetecacegegttetttggeatggegategge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tecacgetetggggaaatateteagaceagtaeggeaggaaaaeagggetgaagateage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      529 ctggtgctccggggcctggtgggcttcgggatcggaggagttccccagtcggtga---cg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       586 ctgtatgccgagttccttcccatgaaagccagagctaaatgtattttgctgattgaggta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            304 gctgtgttcattggtcgactgtcagaccgcgtgggccgaaaagcagcggtgattggatcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            atgacctctgatttggttccacgtaagaccatgtcagcgtgggcaacggtgatgtcg
                                                                                                                                        Yokoi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .;
?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 49; DB 22; Length 1356;
Pred. No. 0.00083;
0; Mismatches 255; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                          8; SEQ ID NO: 3348; 246pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ggetggegttggetgatecteteagetgteeegeteeteetetttgeegt
                                                                                                                                        Ochiai K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1356 BP; 230 A; 388 C; 383 G; 355 T; 0 other;
                                                                                                                                        S, Hayashi M,
Ozaki A;
                                                                                                                                           Mizoguchi H, Ando
Senoh A, Ikeda M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ouery Match 3.0%;
Best Local Similarity 45.5%;
Matches 215; Conservative (
                                                                                    (KYOW ) KYOWA HAKKO KOGYO KK
07-APR-2000; 2000JP-0159162.
03-AUG-2000; 2000JP-0280988.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   European Patent Office.
                                                                                                                                                                                                                                   2001-376931/40
                                                                                                                                                                                                                                                              P-PSDB; AAG93094
                                                                                                                                              Nakagawa S,
Tateishi N,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         904
```

```
AAV49550-V49599 are cDNA sequences which encode human proteins containing
Db 228087 gtgctgattctctctgtcttcaccatgctgtgtgcatttgctccaaacccatgggtgttc 228146
                                                                                                                                                                                                                                                                                                              228326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Transmembrane domain; human; nutrition; cytokine; cell proliferation; differentiation; immune system; stimulator; suppressor; regulator; heamatopoiesis; activin; inhibitor; chemotactic; chemoxinetic; receptor; haemostatic; thrombolytic; ligand; anti-inflammatory; tumour; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a transmembrane domain. These proteins can be used for, e.g. research and nutrition, and may have cytokine and cell proliferation/differentiation, immune stimulating/suppressing, haematopoiesis regulating, tissue growth, activin/inhibin, chemotactic/chemokinetic, haemostatic and thrombolytic, receptor/ligand, anti-inflammatory or tumour inhibition activity.
                                                                                                                                                        ctgtatgccgagttccttcccatgaaagccagagctaaatgtattttgctgattgaggta 645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1083 cagcolggcotgcgagtacotgagtgaggaggattacatggacttgotgtggaccaccot 1142
                                                                                                                                                                                    Db 228207 atgacctctgatttggttccacgtaagaccatgtcagctgggcaacggtgatgatgtc
                                                                                                    228147 gacgettteeqttteategeaggeettgglettggtgettggtgeetteagttaatgeg
                                                                                                                                                                                                                                                                646 ttctgggccatcgggacagtgttcgaggtcgtcctqgctgtgttcgtgatgcccagcctq
                                                                                                                                                                                                                                                                                                            ctggtgctccgggggcttggtgggcttcgggagtcggagttccccagtcggtga...cg
                                                                                                                                                                                                                                                                                                                                                                                             706 ggctggcgttggctgctcatcctcagctgtcccgctcctcctttgccgt 758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1662;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     transmembrane domain - useful for, e.g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1662 BP; 312 A; 486 C; 466 G; 398 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 46.6; DB 19;
Pred. No. 0.0045;
); Mismatches 244;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yamaquchi T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDNA #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   standard; cDNA to mRNA; 1662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 3; Page 120-121; 205pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sekine S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human liver cell clone HP01293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (PROT-) PROTEGENE INC.
(SAGA ) SAGAMI CHEM RES CENTRE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96JP-0301429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Consorvative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             research and nutrition
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kobayashi M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein having
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1998-297932/26.
P-PSDB; AAW64538.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity
Matches 232 Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO9821328-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07-NOV-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13-NOV-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-OCT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-MAY-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAV49559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAV49559;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kato S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 10
                                                                                                                                                        586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAV49559
                                                                                                    qq
                                                                                                                                                        ά
                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME OF COLOR OF STREET                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ολ
                                                      ò
                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             These
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present invention provides a number of nucleotide and protein sequences from the Coryneform bacterium Corynebacterium glutamicum. These are useful for identifying the mutation point of a gene derived from a mutant of coryneform bacterium, measuring expression amount and analysing the expression profile or expression pattern of a gene derived from Coryneform bacterium, and identifying a homologue of a gene derived from coryneform bacterium. Coryneform bacterium coryneform bacterium coryneform bacterium and identifying a homologue of a gene derived from acids, nucleic acids, vitamins, saccharides and organic acids, in the examplification of the invention.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db 227907 gacggctacgacctcattgtgtacggcaccgtccaatcggccttggctaaggagtggaac 227966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              227967 ttaagctctgcaacgctgggcaccatcggctccaccgcgttctttggcatggcgatcggc 228026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   228027 gctgtgttcattggtcgactgtcagaccgcgtgggccgaaaagcagcggtgattggatcc 228086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel polynucleotides derived from Coryneform bacteria, tor identifying mutation point of a gene, measuring expression of a gene, analysing expression profile or pattern of a gene and identifying homologous gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gatgccatggagatgatgatcctcagcatcctggcaccacagctgcattgcgagtggagg 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ctcccaagctggcaggtggcattgctgacctcggtggtctttgtaggcatgatgtccagc 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9t9ct9t9gactct9tactat9gcatccttagtgcatttgc9ccc9tgtatagct9gatc 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tccacgctctggggaaatatctcagaccagtacggcaggaaaacagggctgaagatcagc 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yokoi H;
                                                                                                                                                                                                                                     Coryneform bacterium; amino acid synthesis; vitamin; saccharide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 309400 BP; 70133 A; 86477 C; 83115 G; 69675 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure; SEQ ID NO: 7069; 246pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tch 3.0%; Score 49; DB 22; Length 309400; al Similarity 45.5%; Pred. No. 0.015; 215; Conservative 0; Mismatches 255; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ochiai K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          255; Indels
                                                                                                                                                                                 C glutamicum coding sequence fragment SEQ ID NO: 7069.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hayashi M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ozaki A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ando S,
                           BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ikeda M,
                           AAH68534 standard; DNA; 309400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99JP-0377484.
2000JP-0159162.
2000JP-0280988.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (KYOW ) KYOWA HAKKO KOGYO KK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8-DEC-2000; 2000EP-0127688
                                                                                                                                                                                                                                                                                                                 Corynebacterium glutamicum
                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mizoguchi H,
                                                                                                                                                                                                                                                                organic acid synthesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              European Patent Office.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Senoh A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-376931/40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
Matches 215; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                  EP1108790-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16-DEC-1999;
07-APR-2000;
                                                                                                                                26-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nakagawa S,
Tateishi N,
                                                                                                                                                                                                                                                                                                                                                                                                                   20-JUN-2001.
                                                                         AAH68534;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          469
  AAH68534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

e.g.

for,

useful

transmembrane domain

```
Human protein having thesearch and nutrition
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ctenocephalides felis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1557 gtcca 1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . | ||||
1658 gacca 1662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAC93874;
                                                                                                                                                                   Query Match
                                                                                                                                                                            Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                             1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAC93874
 ò
                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                pp
                                                                                                                                                                                                                                                                                                     Dp
                                                                                                                                                                                                                                                                                                                                           Op
                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                        Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Transmembrane domain; human; nutrition; cytokine; cell proliferation; differentiation; immune system; stimulator; suppressor; regulator; heamatopoiesis; activin; inhibitor; chemotactic; chemokinetic; receptor; haemostatic; thrombolytic; ligand; anti-inflammatory; tumour; ds.
                                                                                                                   1203 gaccatggccctgtgctttgtcatcttct---ccttctgcagcctcctgctgtttatctg 1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /*tag= a
/product= "transmembrane domain containing protein"
cggagtgatggtgttcctccctgtgtgacataggtgggataatcaccccttcatagt
                                                1152 ggtcgaaatcccgggggccttcatagccctcatcaccattgaccgcgtgggccgcatcta
                                                                                                         1260 tgttggaagaaatgtgctcactctgttactcttca---ttgcaagagcgtttatttctgg
                                                                                                                                               aggctttcaaggggcatatgtttacacacctgaggtctaccccacggcaacycgggccct
                                                                                                                                                                 1332 igcaatacaaaigaictgcciggigaaigcigagcigiaccccacaitcgicaggaacci
                                                                                                                                                                                     eggeetggggeacetgcagegggatggcaagagtgggtgetetcateacteegttcaleye
                                                                                                                                                                                                                           ccaggigatgctggaatcctctgtgtacctgactctggcagtttacagtggctgctgcct
                                                                                                                                                                                                                                                               1497 cetggetgecetggeetectgettttgeecattgagaccaaaggeggaggactgeagga
                             1143 ctctgaytttccaggtgtccttgtgactctgtggattattgaccgcctgggggcgcaagaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yamaquchi T;
                                                                                                                                                                                                                                                                                                                                                                           ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                  Human liver cell clone HP01293 cDNA #1.
                                                                                                                                                                                                                                                                                                                                                                         AAV49558 standard; cDNA to mRNA; 1888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers 90..1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sekine S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (PROT-) PROTEGENE INC.
(SAGA ) SAGAMI CHEM RES CENTRE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             97WO-JP04056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                96JP-0301429
                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kobayashi M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1998-297932/26.
P-PSDB; AAW64538.
                                                                                                                                                                                                                                                                                                                  1569 gacca 1573
                                                                                                                                                                                                                                                                                                      gtcca 1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO9821328-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             07-NOV-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13-NOV-1996;
                                                                                                                                                                                                                                                                                                                                                                                                               21-0CT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22-MAY-1998
                                                                                                                                                                                                                                                                                                                                                                                           AAV49558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kato S,
                                                                                                                                                                                                       1392
                                                                                                                                                                                                                                             1452
                                                                                                                                                                                                                                                                                                     1557
                                                                                                                                               1317
                                                                                                                                                                                                                          1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Key
                                                                                                                         Q
                                                                                                                                                                qq
                                                                                                                                                                                                     Dp
                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                        δ
                                                                                                                                              Qγ
                                                                                                                                                                                     δ
                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                      ò
                             ò
                                                                 ò
```

```
containing
                                                  AAV49550-V49599 are CDNA sequences which encode human proteins containin a transmembrane domain. These proteins can be used for, e.g. research and nutrition, and may have cytokine and cell proliferation/differentiation, immune stimulating/suppressing, haematopoiesis regulating, tissue growth, activin/inhibin, chemotactic/chemokinetic, haemostatic and thrombolytic, receptor/ligand,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1083 cagcctggcctgcgagtacctgagtgaggagttacatggacttgctgtggaccaccc 1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1497 cctggctgccctggcctcctgcttttgcccattgagaccaaaggcggaggactgcagga 1556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1203 gaccatggccctgtgcttttgtcatcttct...ccttctgcagcctcctgctgtttatctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tgttggaagaaatgtgctcactctgttactcttca---ttgcaagagcgtttatttctgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1361 acctgarctgcactggttaaacatcataatcatgtgttggccgaatgggaatcaccat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1421 tgcaatacaaatgatctgcctggtgaatgctgagctgtaccccacattcgtcaggaacct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1377 eggeetggggcacetgcagcgggcatggcaagagtgggtgeteteateactecgttcatege
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1481 cggagtgatggtgtgttcctcctgtgtgacataggtgggataatcaccccttcatagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1317 aggett.ceaageggeatatgtttacacacetgaggtetaceccaeggcaacgegggeeet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ccaggigatgctggaatcctctgtgtacctgactctggcagtttacagtggctgctgcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cat flea hindgut and Malpighian tubule (HMT) cDNA, SEQ ID NO:369.
                                                                                                                                                                                                                                                                                                                                                                                                                            6
                                                                                                                                                                                                                                                                                                                                                                         Length 1888;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HMT;
target;
                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                Sequence 1888 BP; 365 A; 545 C; 520 G; 458 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cat flea; hindgut and Malpighian tubule nucleic acid; flea infestation; vaccine; antiparasitic; therapeutic diagnosis; detection; ss.
                                                                                                                                                                                                                                                                                                                                                                      Score 46.6; DB 19;
Pred. No. 0.0048;
0; Mismatches 244;
                                                                                                                                                                                                                              anti-inflammatory or tumour inhibition activity
Claim 4; Page 141-143; 205pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAC93874 standard; cDNA; 549
                                                                                                                                                                                                                                                                                                                                                                      / Match 2.8%;
Local Similarity 47.8%;
hes 232; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
```

341 gcggaaagtgattatg 356

```
The invention relates to novel cat flea (Ctenocephalides felis) nucleic acids which are expressed in hindgut and Malpighian tubule (HMT) tissue or head and nerve cord (HMC) tissue. The invention also relates to the encoded proteins. The invention additionally encompasses expression constructs, recombinant viruses and recombinant cells comprising the nucleic acids of the invention, recombinant cells comprising the nucleic acids of the invention, recombinant production of the proteins, and the proteins, and compositions comprising the inhibitors for administration to an animal. The nucleic acids, and the proteins they encode may be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used as the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used as DMA probes in diagnostic assays (e.g., PGP) to detect and quantitate the presence of cat flea or other homologous nucleic acid function of the proteins and their role in metabolism. The HMT and HMC proteins may be used as antigens in the production of specific antigonists and in assays to identify modulators (agonists and cantibodies, and in assays to identify modulators (agonists and cantibodies and antagonists may also be used to downregulate protein antibodies and antagonists may also be used to downregulate protein antibodies and antagonists may also be used to downregulate protein antibodies and antagonists may also be used to used as a diagnostic agents for detecting immunosorbent assay (ELISA)). The present sequence represents a cat flea HMT cDNA of the invention.
                                                                                                                                                                                                                                                                                                                                                                              Flea Malpighian tubule and head and nerve cord tissue derived nucleic acids useful for the prevention, diagnosis and treatment of flea infestations -
                                                                                                                                                                                                                                                                              Wisnewski N;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 549 BP; 162 A; 83 C; 122 G; 182 T; 0 other;
                                                                                                                                                                                                                                                                              Stinchcomb DT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 26; Page 368; 964pp; English.
                                                                                                                          07-APR-2000; 2000WO-US09437
                                                                                                                                                                         99US-0128704
                                                                                                                                                                                                                                                                              Brandt KS, Gaines PJ,
                                                                                                                                                                                                                                                                                                                           WPI; 2000-656323/63.
                                                                                                                                                                                                                              (HESK-) HESKA CORP.
                       WO200061621-A2.
                                                                                                                                                                         09-APR-1999;
                                                                          19-OCT-2000
```

0;

101 gittgaagatgcgitggcactcacaggitttggaaaattcaattaccttcttctggtcgi 160 267 cactggcttggcttggatggctgatgccatggagatgatgatcctcagcatcctggcacc 326 327 acagctgcattgcgagtggaggctcccaagctggcaggtggcattgctgacctcggtggt 386 387 ctttgtaggcatgatgtccagctccacgctctggggaaatatctcagaccagtacggcag 446 161 gagtggatgcgtattagtatgtgttttgatggaaactcttggaatgagttttgtcgttcc 220 221 ttcagcacaatgtgatctggaattaacaacaaaaaaaggaatattaagcgctatagc 280 Gaps Ouery Match 2.8%; Score 46.4; DB 21; Length 549; Best Local Similarity 48.8%; Pred. No. 0.0029; Matches 125; Conservative 0; Mismatches 131; Indels 0; 207 ò g οχ Q ŏ g οy g

; 0

Gaps

ö

2.8%; Score 46.4; DB 21; Length 1590; 48.8%; Pred. No. 0.0051; Live 0; Mismatches 131; Indels 0;

Conservative

Query Match Best Local Similarity Matches 125; Conserv

gaaaacagggctgaag 462

447

_ _ _ _

The invention relates to novel cat flee (Ctenocephalides felis) nucleic acids which are expressed in hindgut and Malpighian tubule (HMT) tissue or head and nerve cord (HMC) tissue. The invention atso relates to the encoded proteins. The invention additionally encompasses expression constructs, recombinant viruses and recombinant cells comprising the conditional invention, recombinant production of the proteins, and compositions comprising the inhibitors of concoder may be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used to produce an HMT or HNC protein according to standard recombinant to bwa methodology by inserting the nucleic acids into a host cell and culturing the cell to express the protein. The HMT and HNC nucleic acids may also be used as DNA probes in diagnostic assays (e.g., PCR) to detect and quantitate the presence of cat flea or other homologous nucleic acid sund quantitate the presence of cat flea or other homologous nucleic acid function of the proteins and their role in metabolism. The HMT and HNC survived and in assay as antifedens in the production of specific and in assay and their role in metabolism. The HMT and HNC antifeder and in assay and their role in protein and proteins and in assay and their role in metabolism. The HMT and HMT and in assay and the production of specific may be used as antigens. used as diagnostic agents for detecting the presence of flea polypeptides in samples (e.g., by enzyme linked immunosorbent assay (ELISA). The present sequence represents a cat flea HMT cDNA of the invention. downregulate protein expression and activity. The antibodies may also be Flea Malpighian tubule and head and nerve cord tissue derived nucleic acids useful for the prevention, diagnosis and treatment of flea antibodies, and in assays to identify modulators (agonists and antagonists) of HMT and/or HNC protein expression and activity. The anti-HMT/HNC protein antibodies and antagonists may also be used to Cat flea HMT synaptic vesicle 2B-like cDNA ORF, SEQ ID NO:1904 Cat flea; hindgut and Malpighian tubule nucleic acid; HMT; flea infestation; vaccine; antiparasitic; therapeutic target; Sequence 1590 BP; 482 A; 252 C; 349 G; 507 T; 0 other; Wisnewski N; Stinchcomb DT, Claim 1; Page 926-9?7; 964pp; English. AAC95401 standard; cDNA; 1590 BP. 07-APR-2000; 2000WO-US09437. 99US-0128704. 19-FEB-2001 (first entry) diagnosis; detection; ss. Brandt KS, Gaines PJ, Ctenocephalides felis. WPI; 2000-656323/63. HESK-) HESKA CORP. P-PSDB; AAB29626. WO200061621-A2. infestations -09-APR-1999; 19-OCT-2000. AAC95401; RESULT]

a ò q ò g ŏ ò

```
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200061621-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                39-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Brandt KS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAC95399;
                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAC95399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
q
                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to novel cat flea (Ctenocephalides felis) nucleic acids which are expressed in hindgut and Malpighian tubule (HWT) tissue or head and nerve cord (HWC) tissue. The invention also relates to the encoded proteins. The invention additionally encompasses expression constructs, recombinant viruses and recombinant cells comprising the nucleic acids of the invention, recombinant production of the proteins, antibodies against the proteins, a method of identifying inhibitors of daministration to an animal. The nucleic acids, and the proteins they encode may be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used to the protein according to standard recombinant DNA methodology by inserting the nucleic acids into a host cell and culturing the cell to express the protein. The HMT and HNC nucleic acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Flea Malpighian tubule and head and nerve cord tissue derived nucleic acids useful for the prevention, diagnosis and treatment of flea infestations -
                                                                                                                                                                                                                                                                                                                                                                          Cat flea HMT synaptic vesicle 2B-like cDNA complement, SEQ (1) NO:1905
                                                                                                                                                           266
                                                             326
                                                                                   117 gagtygatgcgtattagtatgtgttttgatggaaactcttggaatgagttttgtcgttcc 176
                                                                                                               386
                                     57 gittgaagaigcgitggcactcacaggittiggaaaaitcaaitacciicticlggicgi
                                                                                                               327 acagctgcattgcgagtggaggctcccaagctggcaggtggcattgctgacctcggtggt
                                                                                                                                       cactggcttggcttggatggctgatgccatggagatgatgatcctcaycatcctggcacc
                                                                                                                                                                                                                                                                                                                                                                                                 Cat flea; hindgut and Malpighian tubule nucleic acid; HMT; flea infestation; vaccine; antiparasitic; therapeutic target;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wisnewski
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Stinchcomb DT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; Page 927; 964pp; English.
                                                                                                                                                                                                                                                                                                  BP.
                                                                                                                                                                                                                                                                                                  AAC95402 standard; cDNA; 1590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-APR-2000; 2000WO-US09437.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-0128704
                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                flea infestation; vaccine diagnosis; detection; ss.
                                                                                                                                                                                                               gaaaacagggctgaag 462
                                                                                                                                                                                                                                        297 qcqqaaaqtgattatg 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaines PJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ctenocephalides felis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-656323/63.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P-PSDB; AAB29626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200061621-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-APR-1999;
                                                                                                                                                                                                                                                                                                                                                    19-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Brandt KS,
                                                                                                                                                                                                                                                                                                                           AAC95402
                                                                                                                                                                                                                  447
                207
                                                                267
                                                                                                                                                                                                                                                                                       AAC95402/
                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                       a
```

```
ö
                                                                                                                                                                                                                                                                                           used as diagnostic agents for detecting the presence of flea polypeptides in samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The present sequence represents a cat flea HMT cDNA of the invention.
and quantitate the presence of cat flea or other homologous nucleic acid sequences in samples. They may also be used to study the expression and function of the proteins and their role in metabolism. The HMT and HNC proteins may be used as antigens in the production of specific antibodies, and in assays to identify modulators (agonists and antagonists) of HMT and/or HNC protein expression and activity. The anti-HMT/HNC protein expression and activity. The anti-HMT/HNC protein expression and activity. The antibodies and antagonists may also be used to down regulate protein expression and activity. The antibodies may also be used to the protein expression and activity. The antibodies may also be used to down regulate protein expression and activity. The antibodies may also be used to the protein expression and activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1534 GTTGAAGATGCGTTGGCACTCACAGGTTTTGGAAAATTCAATTACCTTCTTCTGGTCGT 1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1414 TTCAGCACAATGTGATCTGGAATTAACAACAAAAAGGAATATTAAGCGTATAGC 1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Flea Malpighian tubule and head and nerve cord tissue derived nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       267 cactggcttggcttggatggctgatgccatggagatgatgatcctcagcatcctggcacc 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 327 acagctgcattgcgagtggaggctcccaagctggcaggtggcattgctgacctcggtggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1474 GAGTGGATGCGTATTAGTATGTGTTTTGATGGAAACTCTTGGAATGAGTTTTGTCGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   387 ctttgtaggcatgatgtccagctccacgctctggggaaatatctcagaccagtacggcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 46.4; DB 21; Length 1590;
Pred. No. 0.0051;
0; Mismatches 131; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cat flea; hindgut and Malpighian tubule nucleic acid; HMT;
flea infestation; vaccine; antiparasitic; therapeutic target;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cat flea HMT synaptic vesicle 2B-like cDNA, SEQ ID NO:1901.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1590 BP; 507 A; 349 C; 252 G; 482 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ż
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wisnewski
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Stinchcomb DT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAC95399 standard; cDNA; 1875 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-APR-2000; 2000WO-US09437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0128704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1294 GCGGAAAGTGATTATG 1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             447 gaaaacagggctgaag 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   diagnosis; detection; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 125; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaines PJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ctenocephalides felis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2000-656323/63.
P-PSDB; AAB29626.
```

```
ands which are expressed in hindry and purpose and and are accorded to the constructs. The invention also relates to the encoded proteins. The invention additionally encompasses expression constructs, recombinant viruses and recombinant cells comprising the nucleic acids of the invention, recombinant production of the proteins, and compositions comprising the inhibitors of the proteins, and compositions comprising the inhibitors of the proteins, and compositions comprising the inhibitors of deministration to an animal. The nucleic acids, and the proteins they encode may be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used to produce an HMT or HNC protein according to standard recombinant DNA methodology by inserting the nucleic acids into a host cell and culturing the cell to express the protein. The HMT and HNC nucleic acids and quantitate the presence of cat flea or other homologous nucleic acid sequences in samples. They may also be used to study the expression and contino of the proteins and their role in metabolism. The HMT and HNC proteins may be used as antigens in the production of specific antibodies, and in assays to identify modulators (agonists and antagonists) of HMT and/Or HNC protein expression and activity. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               anti-HMT/HNC protein antibodies and antagonists may also be used to downregulate protein expression and activity. The antibodies may also be used as diagnostic agents for detecting the presence of flea polypeptides in samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The present sequence represents a cat flea HMT cDNA of the invention.
                                                                                                                             The invention relates to novel cat flea (Ctenocephalides felis) nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             160 gagtggatgcgtattagtatgtgttttgatggaaactcttggaatgagttttgtcgttcc 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             327 acagctgcattgcgagtggaggctcccaagctggcaggtggcattgctgacctcggtggt 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ctttgtaggcatgatgtccagctccacgctctggggaaatatctcagaccagtacggcag 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   280 ttttataggtattataagcagttcacatttatggggattttagccgatacgagggggg 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100 giitgaagaigcgiiggcacicacaggiiitggaaaaiicaaiiacciicticiggicgi 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      267 cactggcttggcttggatggctgatgccatggagatgatgatcctcagcatcctqgcacc 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Gaps
acids useful for the prevention, diagnosis and treatment of flea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2.8%; Score 46.4; DB 21; Length 1875;
48.8%; Pred. No. 0.0055;
tive 0; Mismatches 131; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1875 BP; 603 A; 283 C; 388 G; 601 T; 0 other;
                                                                           Claim 1; Page 920-923; 964pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Search completed: March 8, 2002, 02:58:01
Job time: 11489 sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gaaaacagggctgaag 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gcggaaagtgattatg 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 2.8
Best Local Similarity 48.8
Matches 125; Conservative
                           infestations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       340
  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ολ
```

```
Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          , MOLECULE TYPE:
US-08-501-572-5
       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                CITY: Was
STATE: D
COUNTRY:
                                                                                                                                                                                                                                                                                                         STREET:
                                                         RESULT
  δ
                                           0 0 0 0 0 0 0 0 0 0 0 0
                                                                      (without alignments)
2714.962 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Appli
                                                                                                                                                                                                                                                                                                                                                                                                                        Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                Appl
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Appl
Appl
                                                                                                                                                                                                                                                                                                        pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                           1 atggaggaggacttattcca.......cgaactctggctctcaggaa 1644
                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, 1
Sequence 14,
                                                                                                                                                                                                                                                                                                                                                                                Sequence 5,
                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 4,
                                                                                                                                                                                                                                                                                                                                                                  Description
                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 6
Sequence 6
Sequence 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 3
Sequence 3
Sequence 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                           March 8, 2002, 02:35:33 ; Search time 137.14 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sednence
                                                                                                                                                                   702406
                                                                                                                                                                                                                                                 /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
/cgn2_6/ptodata/2/ina/5B_COMB.seq:*
/cgn2_6/ptodata/2/ina/6A_COMB.seq:*
/cgn2_6/ptodata/2/ina/6B_COMB.seq:*
/cgn2_6/ptodata/2/ina/PcTUS_COMB.seq:*
/cgn2_6/ptodata/2/ina/pcTus_comB.seq:*
             GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                         US-09-040-444-5
US-08-23-463-14
US-08-501-572-6
US-09-040-444-6
US-09-040-444-4
US-09-040-444-4
US-09-428-517-1
US-09-428-517-1
US-08-964-127-1
US-08-964-127-1
US-08-964-127-1
US-08-964-127-1
US-08-964-127-1
US-08-964-127-1
US-08-964-127-1
US-08-964-127-1
US-08-964-127-1
US-08-97-658-2
US-08-481-238-2
US-08-481-238-2
US-08-481-238-2
US-08-481-238-2
US-08-481-238-2
US-08-481-238-2
US-08-481-238-2
US-08-484-956-2
US-08-757-653-2
US-08-757-757-756-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -682-853A-2
                                                                                                                                                                     hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -08-759-038-2
-08-758-314-2
                                                                                                                                                    351203 segs, 113238999 residues
                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                            Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                               - nucleic search, using sw model
                                                                                                                               IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                            Issued_Patents_NA:*
                                                                                                                                                                                     length: 0
length: 2000000000
                                                                                            US-09-911-667A-3
1644
                                                                                                                                                                                                                                                                                                                                                                    DB
                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                            Query
Match I
                                                                                                                                                                                                                 Post-processing:
                                                                                                                                                                        of
                                                                                                                                                                                                                                                                                                                                                                      Score
                                                                                                                                                                                       Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
Perfect score:
                                                                                                                               Scoring table:
                                                                                                                                                                        Total number
                                                  OM nucleic
                                                                                                                 Sequence:
                                                                                                                                                         Searched:
                                                                                                                                                                                                                                                Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Result
No.
                                                                  Run on:
```

```
| National Colored Col
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                     5, Appli
21, Appl
21, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1083 cagootggcotgcgagtacotgagtgaggaggattacatggacttgotgtggaccaccot 1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 749,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                   Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
9
                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 53.2; DB 3; Length 18 Pred. No. 8.3e-06; 0; Mismatches 248; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E: Finnegan, Henderson, Farabow, Garrett & Dunner
1300 I Street, N.W., Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IEM PC compatible
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/501,572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: TOODBY, Kimberlin M
REGISTRATION NUMBER: 35, 391
REGISTRATION UNBER: 02481.1453-00000
TELECOMMUNICATION INFORMATION:
TELEPRONE: (202)408-4400
TELEPAX: (202)408-4400
TELEPAX: (202)408-1400
US-08-647-397-1

US-09-007-005-17

US-09-274-796-17

US-09-276-531-46

US-08-061-465-3

US-08-061-465-1

US-08-061-465-1

US-08-061-465-1

US-08-061-465-1

US-08-081-12

US-09-060-694-12

US-08-056-051-5

US-07-928-611-21

US-08-056-051-5

US-08-056-051-5

US-09-060-694-21

US-09-060-694-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PCT-US93-07370-21
US-07-908-245-1
US-08-998-416-749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ouery Match 3.2%;
Best Local Similarity 47.3%;
Matches 228; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY: USA
ZIP: 20005-3315
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
```

5:

Gaps

```
1203 gaccatggccctgtgctttgtcatcttctccttctgcagcctcctgctgtttatctgtgt 1262
                                                                                                                                                                                                                                                                                                                                                         1284 ccccargeccordreaartrerrescegesecaeccrectrerrrrarercace 1343
                                                                                                                                                                                                                                                                                                                                                                                          1263 tggaagaaatgtgctcactctgttactcttca---ttgcaagagcgtttatttctggagg 1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1464 AGIGAIGGIGITCCTCCCIGIGIGACAIAGGIGGGAIAAICACCCCCTTCAIAGICIT 1523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1500 ggctgccctggctcctgctttttgcccattgagaccaaaggcggaggactgcaggagtc 1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1584 TGCCGCGGGGGTGACGCTACTTCTTCC---AGAGACCAAGGGGACGCTTTGCCAGAGAC 1640
                                                                                                                                                                                         cagootggcotgcgagtacotgagtgaggattacatggacttgctgtggaccacoot 1142
                                                                                                                                                                                                         1164 CATCCTGCACATGGGGGCCCACCAGGGGGGAACCTCTACCTGACTTTCCTTTACTCGGTCT 1223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1380 cctaaqcacctycagcggcatggcaagagtgggtgctctcatcactccgttcatcgccca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ggtgatgctygaatcctctgtgtacctgactctggcagtttacagtggctgctcct
                                                                                                                                                                                                                                                                                                                                                                                                                           1344 TGACCTGCACTGGTTAAACATCATAATCATGTGTTTGGCCGAATGGGAATCACCATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1320 ctttcaagcggcatatgtttacacctgaggtctaccccacggcaacgcgggcctcgg
                                                                                                                                                          9
                                                                                                                         Length 1885;
                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,463
                                                                                                                         Score 53.2; DB 3;
Pred. No. 8.3e-06;
0; Mismatches 248;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: DONNER, F. APPLICANT: SCHEIFLINGER, F. APPLICANT: SCHEIFLINGER, F. APPLICANT: FAIKNER, F. G. TITLE OF INVENTION: RECOMBINANT FOWLPOX VIRUS NUMBER OF SEQUENCES: 52
CADRESPONDENCE ADDRESS:
ADDRESSEE: Foley & Lardner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; Sequence 14, Application US/08232463
; Patent No. 5670367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Established Statement 1800 Diagonal Road,
                                                          MOLECULE TYPE: DNA (genomic) US-09-040-444-5
                                                                                                                            Query Match 3.2%;
Best Local Similarity 47.3%;
Matches 228; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ZIP: 22313-0299
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
   pairs
               TYPE: nucleic acid
STRANDEDNESS: single
1885 base
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alexandria
                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: Alex
STATE: VA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1641 CA 1642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ca 1561
                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-232-463-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
   LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1560
                                                                                                                                                                                                  1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                 OD
                                                                                                                                                                                                                                                                                                                                                                                                  Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Koepsell, Hermann
APPLICANT: Grundeman, Dirk
APPLICANT: Grundeman, Dirk
APPLICANT: Groboulev, Valentin
TITLE OF INVENTION: Transport protein Which Effects The
TITLE OF INVENTION: Transport of Cationic Xenobiotics and\or Pharmaceuticals,
TITLE OF INVENTION: DNA Sequences Encoding It And Their Use.
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   gaccatggccctgtgctttgtcatcttctccttctgcagcctcctgctgtttatctgtgt 1262
                                                                                                                                                                                    tggaagaaatgtgctcactctgttactcttca---ttgcaagagcgtttattctggagg 1319
                                                                                                                                                                                                       1379
                                                                                                                                                                                                                                                                                     1463
                                                                                                                                                                                                                                                                                                                      1439
                                                                                                                                                                                                                                                                                                                                                  1464 AGTGATGGTGTGTTCCTCCCTGTGTGACATAGGTGGGATAATCACCCCTTCATAGTCTT 1523
                                                                                                                                                                                                                                                                                                                                                                                                                    cctgggcacctgcagcggcatggcaagagtgggtgctctcatcactccgttcatcgccca
                                                                                                                                                                                                                                                                                                                                                                                      1440 ggigatgeiggaateeteigigtaeetgaeteiggeagittaeagiggeigeigeeteet
   ctttcaagcggcatatgtttacacacctgaggtctaccccacggcaacgcggggcctcgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5: Finnegan, Henderson, Farabow, Garrett & Dunner, L.I..P.
1300 I Street, N.W., Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTMARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2481.1453-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/09/040,444
FILING DATE: March 18, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY AGENT INFORMATION:
NAME: O'Connor, Steven P
REGISTATION NUMBER: 41,225
REFERENCE/POCKET NUMBER: 2481.
TELEPHONE: (202)408-400
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 5, Application US/09040444 Patent No. 6063766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: Washington STATE: D C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20005-3315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CA 1642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ca 1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET:
CITY: Wa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-040-444-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1641
                           1164
                                                                                                                           1203
                                                                                                                                                                                           1263
                                                                                                                                                                                                                                                             1320
                                                                                                                                                                                                                                                                                                                           1380
                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                       αG
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                      Q
                                                                                                                                                                                           δ
                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                          g
                                                                                                                           ŏ
                                                            ò
```

```
APPLICANT: Koepsell, Hermann
APPLICANT: Gruddeman, Dirk
APPLICANT: Gruddeman, Dirk
TITLE OF INVENTION: Transport protein Which Effects The
TITLE OF INVENTION: Transport of Cationic Xenobiotics and\or Pharmaceuticals,
TITLE OF INVENTION: DNA Sequences Encoding It And Their Use.
NUMBER OF SEQUENCES: 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1106 gtgaggaggattacatggacttgctgtggaccaccctctctgagtttccaggtgtccttg 1165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1166 tgactctgtggattattgaccgcctggggcgcaagaagaccatggc----cctgtgctt 1220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1382 TTGCAGGGGCAGCCTGTCTGCCTGTTTTATACCTGGTGATCTACAATGGCTAAAAA 1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ctctgttactcttcattgcaagagcgtttatttctggaggctttcaagcggcatatgtt 1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1442 TIATTATCTCATGCTTGGGAAGAATGGGGATCACAATGGCCTATGAGATAGTCTGCCTGG 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1340 acacacctgaggtctaccccacggcaacgcgggccctcggcctgggcacctgcagcggca 1399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1400 tggcaagagtgggtgctctcatcactccgttcatcgcccaggtgatgctggaatcctctg 1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1562 IGTGTGACATTGGTGGCATCATGCTGGTCTACCGGCTCACATAACATCTGGC 1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1262 GTGACAATATCTACCTGGATTTCTTCTACTGTGCCCTGGTTGAATTCCCAGCTGCCTTCA 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1896;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 45; DB 3; Length 189
Pred. No. 0.0021;
0; Mismatches 205; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1622 TTGAGCTCCCGCTGATGGTTTTCGCCGTACTTGGCTTGTTGT 1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1460 igtaccigactetggcagittacagiggetgetgeeteetggetg 1504
                                                                                               SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/501,572
                                                                                                                                                                                                     ATTORNEY AGENT INFORMATION:
ATTORNEY AGENT INFORMATION:
REGISTRATION NUMBER: 35,391
REFERENCE, FOOCKET NUMBER: 02481.1453-00000
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)408-4000
TELEFAX: (202)408-4400
                                                                                    PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 6, Application US/09040444 Patent No. 6063766 GENERAL INFORMATION:
                                                             IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 47.9%;
Matches 194; Conservative
ZIP: 20005-3315
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                             1896 base pairs
                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                               nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                        CLASSIFICATION: 424
                                                               COMPUTER: IBM PC OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRANDEDNESS:
                                                                                                                                                                          FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 5
US-09-040-444-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-501-572-6
                                                                                                                                                                                                                                                                                                                                                                                                             LENGIH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Koepsell, Hermann
APPLICANT: Grundeman, Dirk
APPLICANT: Grundeman, Dirk
APPLICANT: Groboulev, Valentin
TITLE OF INVENTION: Transport protein Which Effects The
TITLE OF INVENTION: Transport Of Cationic Xenobiotics and\or Pharmaceuticals,
TITLE OF INVENTION: DNA Sequences Encoding It And Their Use.
OWNER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1181 ttgaccgcctggggggggaagaagaccatggccctgtgctttgtcatcttctccttctgca 1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1241 gootootgotgittaicigigitiggaagaaatgigcicactotgitacicitcaitgoaa 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1301 gagcgittaitticiggaggetticaagcggcataigtitacacacctgaggictacccca 1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1361 eggeaacgegggeeeteggeetgggeacetgeageggeatggeaagagtggtgetetea 1420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1421 teactecogtteategeceaggtgatgetggaateetetgtgtaeetetggeetetggeagttt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2.7%; Score 45.2; DB 1; Length 7218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1481 acagiggetgetgeeteetggetgeeetggeeteetgettittgeeeatt 1530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE: Finnegan, Henderson, Farabow, Carrett & Dunner
STREET: 1300 I Street, N.W., Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches 142;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. 0.0038;
                                                                                                                                                                                                                       30472/114 IMMU
                                                                                                               EP 91 114 300.6
                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/935,313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 6, Application US/08501572
Patent No. 6063623
                                                                                      FILING DATE:
APPLICATION NUMBER: EP 91 114
FILING DATE: 26-AUG-1991
ATONNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29,768
REFERENCE/CDCKET NUMBER: 3047
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703)836-9300
TELEFAX: (703)833-4109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 2.7%; Scc
Best Local Similarity 4.0%; Prec
Matches 14; Conservative 194;
                                                                                                                                                                                                                                                                                                         TELEX: 899149,
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
LENGTH: 7218 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             , CLONE: pTZgpt-F1s
US-08-232-463-14
                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             IMMEDIATE SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STATE: D. COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-501-572-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δλ
```

q

ò

ò

ò

ò

ò

```
TITLE OF INVENTION: Transport protein Which Effects The TITLE OF INVENTION: Transport Of Cationic Xenobiotics and\or Pharmaceuticals, TITLE OF INVENTION: DNA Sequences Encoding It And Their Use. NUMBER OF SEQUENCES: 6 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1346 igrerigacestransassescenecratistscrassasserrassersassests 1405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1351 gictaccccacggcaacgcgggcctcggcctgggcacctgcagcggcatggcaagagig 1410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1406 CTGTACCCTACATTCATCAGGAATCTTGGGATGATGGATTGCTCTGCCCTGTGTGACCTG 1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1411 ggtgctctcatcactccgttcatcgcccaggtgatgctggaatcctctgtgtacctgact 1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1471 ctggcagtttacagtggctgctgctcctggctgcctggcctcctgcttttgcccatt 1530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1526 CT---CAPITIGITIGGGGTTITGGGCCTGACTGCTGGGGCCATGACTCTTCTTCTCCCA 1582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1286 GCCTGCTCCTCATGATCTTTATCCCGCATGAGCTGGACGTTGAACGTTACCCTCGCC 1345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1291 ttcattgcaagagcgtttatttctggaagctttcaagcggcatatgtttacaccctgag 1350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1117 tacatggacttgctgtggaccacctctgagtttccaggtgtccttgtgactctgtgg 1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1177 attattgaccgcctgggggggaagaagaccat---ggccctgtgctttgtcatcttctcc 1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1882;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ouery Match 2.3%; Score 38.6; DB 3; Length 1
Best Local Similarity 47.0%; Pred. No. 0.16;
Matches 224; Conservative 0; Mismatches 244; Indels
                                                                                                          E: Finnegan, Henderson, Farabow, Garrett & Dunner
1300 I Street, N.W., Suite 700
                                                                                                                                                                                                                                                                                                        Version #1.30
                                                                                                                                                                                                                                                        COMPUTER: ILLOPPY GISK
COMPUTER: IBM PC COMPATIBLE
COMPUTER: THE PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/501,572
FILING DATE:
FILING DATE:
FILING DATE:
FILING DATE:
TLASSIFICATION: 424
ATYONEY AGENT INFORMATION:
REGISTRATION UNMBER: 35,391
REGISTRATION UNMBER: 35,391
REPERENCE/DOCKET NUMBER: 35,391
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)408-4000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , MOLECULE TYPE: DNA (genomic) US-08-501-572-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION FOR SEQ 1D NO: 4 SEQUENCE CHARACTERISTICS: LENGTH: 1882 base pairs TYPE: nucleic acid
                                                                                                                                                                                                             ZIP: 20005-3315
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                CITY: Washington
                                                                                                                             ADDRESSEE:
STREET: 13
                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                  STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ογ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1340 acacacctgaggtctaccccacggcaacgcgggccctcggcctgggcacctgcagcygca 1399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1502 TCAATGCTGAGCTGTACCCCACATTCATAGGAATCTTGGCGTCCACATCTGTTCCTCAA 1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1280 cicigitaciciticaligcaagagcgittatticiggaggciticaagcggcataigiti 1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1442 TTATTATCTCATGCTTGGGAAGAATGGGGATCACAATGGCCTATGAGATAGTCTGCCTGG 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1166 tgactctgtggattattgaccgcctgggggcgcaagaagaccatggc----cctgtgctt 1220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1106 graaggagtatacatggacttgctgtggaccaccctctcgggtttccaggtgtccttg 1165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1262 GTGACAATATCTGGATTTCTTGTACTCTGCCTGGTTGAATTCCCAGCTGCCTTCA 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tgtcatcttctccttctgcagctcctgctgtttatct-gtgttggaagaaatgtgctca
                                         ADDRESSEE: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.
STREET: 1300 I Street, N.W., Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
2.7%; Score 45; DB 3; Length 1896;
Best Local Similarity 47.9%; Pred. No. 0.0021;
Matches 194; Conservative 0; Mismatches 205; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1460 igtacctgactctggcagittacagiggctgctgctcctggctg 1504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PCT COMPATIBLE COMPUTER: IBM PC COMPATIBLE COMPUTER: PATENTIN Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION:
CLASSIFICATION:
NAME: O'COMPOT. Steven P
REGISTRATION NUMBER: 41,225
REGISTRATION NUMBER: 2481.1453-01
REFERENCE/DOCKET NUMBER: 2481.1453-01
RELECOMMUNICATION INFORMATION:
TELEPHONE: (202)408-4400
TELEFAX: (202)408-4400
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 1896 base pairs
                                                                                                                                                                                                                                                                           UMBER: US/09/040,444
March 18, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 4, Application US/08501572
Patent No. 6063623
GENERAL INFORMATION:
APPLICANT: Koepsell, Hermann
APPLICANT: Grundeman, Dirk
APPLICANT: Grundeman, Dirk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nucleic acid
                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
FILING DATE: March
CLASSIFICATION:
                                                                                              Washington
                                                                                                                                                    20005-3315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 6
US-08-501-572-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-040-444-6
                                                                                                                   STATE: D
```

Q QY

q

Ω οχ qq ò Db Óγ

g ò ò

```
1526 CT---CATTTTGGGGTTTTGGGCCTGACTGCTGGGGCCATGACTCTTCTTCTCCCA 1582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; OTHER INFORMATION: Description of Artifical Sequence: Recombinant DNA US-09-428-517-1
                                                                            APPLICANT: Betlach, Mary C.
APPLICANT: Shah, Sanjay Krishnakant
APPLICANT: Shah, Sanjay Krishnakant
APPLICANT: McDaniel, Robert
APPLICANT: McDaniel, Robert
APPLICANT: Tang, ul
TITLE OF INVENTION: RECOMBINANT OLEANDOLIDE POLYKETIDE SYNTHASE
TITLE OF INVENTION: RECOMBINANT OLEANDOLIDE POLYKETIDE SYNTHASE
FILE REFERENCE: 30062-20029.00
CURRENT FILING DATE: 1999-10-28
CURRENT FILING DATE: 1999-02-16
EARLIER PILING DATE: 1999-02-16
EARLIER FILING DATE: 1999-10-29
NUMBER OF SEQ ID NOS: 12
SOUTWARE: PALENTIN VET. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Sequence 14, Application US/08232463
; Sequence 14, Application US/08232463
; Patent No. 5670367
; GENERAL INFORMATION:
; APPLICANT: BONNER, F.
; APPLICANT: FALKNER, F. G.
; TITLE OF INVENTION: RECOMBINANT FOWLPOX VIRUS
; TORRESPONDENCE ADDRESS:
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: FOLLOW & Lardner
; STREET: 1800 Diagonal Road, Suite 500
; STATE: VAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 2.3%; Score 37.6; Df
Best Local Similarity 54.3%; Pred. No. 1.8;
Matches 76; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             37603 ccgaggctttgcacacggtg 37622
                                                                                                                                                                                                                    ; Sequence 1, Application US/09428517; Patent No. 6251636; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   191 ccgatgatactttcatggtg 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZIP: 22313-0299
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 9
US-08-232-463-14/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 50937
                                                                                            1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                    q
                                                                                            ολ
                                                                                                                                                                                               Pharmaceuticals,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1411 ggtgctctcatcactccgttcatcgcccaggtgatgctggaatcctctgtgtacctgact 1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1234 tictgcagcctcctgctgtttatctgtgttggaagaaatgtgctcactctgttact---c 1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1291 ttcattgcaagagcgtttatttctggaggctttcaagcggcatatgtttacaccctgag 1350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1346 IGECTIGGCCGTATGGGGGCCACCATTGTGCTGCAGATGGTCTGCCTGGTGAACGCTGAG 1405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gtctaccccaeggcaacgegggcccteggcrtqgcacctgcagegggatggcaagagtg 1410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1406 CIGIACCCIACATICATCAGGAATCITGGGATGATGGATTGCTCTGCCCTGTGTGACCTG 1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.
1300 I Street, N.W., Suite 700
                                                                                                                 APPLICANT: Koepsell, Hermann
APPLICANT: Grubdean, Dirk
APPLICANT: Grubdlev, Valentin
TITLE OF INVENTION: Transport protein Which Effects The
TITLE OF INVENTION: Transport Of Cationic Xenobiotics and\or
TITLE OF INVENTION: DAS Sequences Encoding It And Their Use.
WUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1882;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match

2.3%; Score 38.6; DB 3; Length 1
Best Local Similarity 47.0%; Pred. No. 0.16;
Matches 224; Conservative 0; Mismatches 244; Indels
                                                                                                                                                                                                                                                                                                                                       STATE: D.C.
COUNTRY: USA
ZIP: 20005-3315
COMPOTER: ELOPPY disk
MEDIUM TYPE: Floppy disk
COMPOTER: IBM PC Compatible
COMPOTER: PatentIn Release #1.0, Version #1.30
SOFTWARE: PatentIn Release #1.0, Version #1.30
FURING DATE: MARCH 18, 1998
FLIGATION NUMBER: US/09/040,444
FILING DATE: MARCH 18, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATORNEY AGENT INFORMATION:
NAME: O'CONDOR, Steven P
REGISTATION UNBER: 41,225
REFERENCE/DOCKET MUMBER: 2481.
TELECOMMUNICATION INFORMATION:
TELEFHOME: (202)408-4400
TELEFAX: (202)408-4400
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                    ; Sequence 4, Application US/09040444; Patent No. 6063766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE: DNA (genomic) US-09-040-444-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 1882 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                           STREET: 1300 I S
CITY: Washington
                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                              -08-040-444-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ОÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
```

```
gctgtggactctgtactatggcatccttagtgcatttgcgcccgtgtatagctggatcct 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               411 cacgetetggggaaatateteagaeeagtaeggeaggaaaaaeagggetgaagateagegt 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      836 CCTGTTCCTGGGTTACCCCGCAGACAGATTTGGCCGTCGCGGGATTGTGCTGCTGACCTT 895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              896 GGGGCTGGTGGCCCCCTGTGGAGTAGGAGGGGCTGCTGCAGGCTCCTCCACAGGCGTCAT 955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       351 cccaagctggcaggtggcattgctgacctcggtggtctttgtaggcatgatgtccagctc 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 36.4; DB 4; Length 1490; Pred. No. 0.64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Grandearl, Andrew David John
TITLE OF INVENTION: NOVEL GENES ENCODING TRANSPORTER-LIKE
TITLE OF INVENTION: MOLECULES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches 126;
                                                                                                COMPUTER: IBM Compatible OPERATING SYSTEM: Windows 95 SOFTWARE: FastSEQ for Windows Version 2.0b CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                            NAME: Crews, Ph.D., L. Lee
REGISTRATION NUMBER: P-43.567
REPERENCE/DOCKET NUMBER: 07334/038001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617/542-5070
TELEFAX: 617/542-8906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS: ADDRESSERVENCE ADDRESSE: ADDRESSEE: Fish & Richardson P.C. STREET: 225 Franklin Street CITY: Boston
                                                                                                                                                                           APPLICATION NUMBER: US/08/964,127
FILING DATE: 06-NOV-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1, Application US/08964127
Patent No. 6277565
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: Coding Sequence COCATION: 492...1349
                                                                                                                                                                                                                                                                                                                                                                                                               TELEX: 200154
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                           FILING DATE: ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genomic DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 1490 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 2.2'
Best Local Similarity 47.1
Matches 112; Conservative
                                                                                    Diskette
                          COUNTRY: USA
21P: 02110-2804
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE: MA
COUNTRY: USA
ZIP: 02110-2804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-964-127-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΩD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ::
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       123 ccacgtgjgcctagaggctgtggagctggatgatggggcagctgtgcccaaggagtttgc 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      243 atttcagtggaagctgtcttctcactggcttggcttggatggctgatgccatggagat 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63 gagtgcaaggtcagaggacgacacggcttcaggagagcatgaagtccagattgaaggggt 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3 ggaggaggacttattccagctaaggcagctgccggttgtgaaattccgtcgcacaggcga 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                183 caatrccaccgatgatactttcatggtggaagatgcagtggaagccattggctttggaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 7218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Grandearl, Andrew David John
TITLE OF INVENTION: NOVEL GENES ENCODING TRANSPORTER-LIKE
TITLE OF INVENTION: MOLECULES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
2.2%; Score 36.6; DB 1; Length 7
Best Local Similarity 4.6%; Pred. No. 1.3;
Matches 15; Conservative 175; Mismatches 139; Indels
MEDIUM TYPE: Floppy disk
COMPUTER: 1BM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,463
                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: 30472/114 IMMU TELECOMUNICATION INFORMATION: TELEPHONE: (703)836-9300 TELEFAX: (703)683-4109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1070 RRRRATGGCAAGCTCCCTCGACCTGCAGC 1042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      303 gatgatecteageateetggeaceaege 331
                                                                                                                       FILING DATE:
CLASSIPICATION: 435
CLASSIPICATION DATA:
APPLICATION NUMBER: US/07/935,313
FILING DATE:
APPLICATION NUMBER: EP 91 114 300.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 17
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 225 Franklin Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 3, Application US/08964127 Patent No. 6277565 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                              29,768
                                                                                                                                                                                                                                                                                                                                                                                                               14:
                                                                                                                                                                                                                                  FILING DATE: 26-AUG-1991
ATTORNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29,7
                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 7218 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                           TELEX: 899149
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: linear
IMMEDIATE SOURCE:
CLONE: pTZgpt-F1s
US-08-232-463-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 10
US-08-964-127-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
```

qq

g ŏ Ω ò

ô

```
1171 GAGGAGGACGAGGAGGAGGAGGAGGAGGAGGAGGAGGATGATGATGAGGAC 1230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  136 gaggotgtgggggtgggtgggtggggctgtgcccaaggagtttgccaatcccaccgat 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     76 gaggacgacacggcttcaggaggcatgaagtccagattgaaggggtccacgtgggccta 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: BOHONZKY, ROY A.
APPLICANT: RUSSO, James J.
APPLICANT: Edelman, Isidore S.
APPLICANT: MOORE, Patrick S.
APPLICANT: MOORE, Patrick S.
TITLE OF INVENTION: POLYPEPTIDES FROM KAPOSI'S SARCOMA-ASSOCIATED
TITLE OF INVENTION: HERPESVIRUS, DNA ENCODING SAME AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 3489;
COMPUTER FRADABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: Eloppy disk
COMPUTER: Ploppy disk
COMPUTER: PatentIn Release #1.0, Version #1.30
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATE:
CLASSIFICATION NUMBER: US/08/728,323A
FILING DATE:
CLASSIFICATION: 435
ATTORNEY AGENT INFORMATION:
NAME: White, John P.
REGISTRATION NUMBER: 05/5/52268/JPW/MSC/SKS
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                           0575/52268/JPW/MSC/SKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       196 gatactttcatggtggaagatgcagtggaagcca 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 35.6; DE
Pred. No. 1.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE: Cooper & Dunham LLP
STREET: 1185 Avenue of the Americas
CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 20, Application US/08770379
Patent No. 5849564
GENERAL INFORMATION:
APPLICANT: Chang, Yuan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY: linear MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: 212-391-0525
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3489 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 51.9
Matches 80; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1..3489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-770-379-20/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STATE: Ne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY:
1.0CATION:
US-08-728-323A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     471 gctgtggactctgtactatggcatccttagtgcatttgcgcccgtgtatagctggatcct 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           411 cacgetetggggaaatateteagaeeagtaeggeaggaaaaeeagggetgaagateagegt 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 2460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Chang, Yuan
APPLICANT: Bohenzky, Roy A.
APPLICANT: Bohenzky, Roy A.
APPLICANT: Russo, James J.
APPLICANT: Belman, Isidore S.
APPLICANT: Moore, Patrick                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ouery Match 2.2%; Score 36.4; DB 4; Best Local Similarity 47.1%; Pred. No. 0.84; Matches 112; Conservative 0; Mismatches 126;
                                    COMPUTER FRANKLIST COMPUTER FOR COMPUTER I DISKETTE COMPUTER I DISKETTE COMPUTER FOR COMPUTER WINDOWS 95 OPERATION SYSTEM. WINDOWS 95 SOFTWARE: FRASTSO FOR WINDOWS VERSION 2.0b SOFTWARE APPLICATION NUMBER: US/08/964,127 FILING DATE: 06-NOV-1997 PRIOR APPLICATION NUMBER: FILING DATE: FILING DATE: FILING DATE: FILING DATE: FILING DATE: PRORNEY/ACENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E: Cooper & Dunham LLP
1185 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                07334/038001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1, Application US/08728323A Patent No. 5948676 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                  NAME: Crews, Ph.D., L. Lee
REGISTRATION NUMBER: P-43,567
                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 07
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617/542-5070
TELEFAX: 617/542-8906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: Coding Sequence LOCATION: 498...2057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEX: 200154
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear
MOLECULE TYPE: Genomic DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 2460 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
             COMPUTER READABLE FORM MEDIUM TYPE: Disket1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New York
: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-728-323A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-964-127-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
```

q

ó

QQ ò q ò

δ

```
20826 GAGGAGGACGAGGAGGACGAGGAGGAGGAGGAGGAGGATGACGATGATGAGAC 20767
                                                                                                                                                                                                                                                                                                                                                                              136 gaggetgtggagetggatgatgggeagetgtgeccaaggagtttgecaateccacegat 195
                                                                                                                                                                                                                                                                                             76 gaggacgacacggcttcaggagagcatgaagtccagattgaaggggtccacgtgggccta 135
                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                     .
;
                                                                                                                                                                                                          Score 35.6; DB 4; Length 32207;
Pred. No. 5.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Dahlberg, James E.
APPLICANT: Lyamichev, Victor I.
APPLICANT: Lyamichev, Victor I.
APPLICANT: Brow, Mary Ann
TITLE OF INVENTION: SYNTHESIS-DEFICIENT THERMOSTABLE DNA
TITLE OF INVENTION: POLYMERASE
NUMBER O. SEQUENCES: 29
CORRESPONDENCE ADDRESS:
ADDRESSEE: HAVERSTOCK, MEDLEN & CARROLL
                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                     74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: HAVERSTOCK, MEDLEN & CARROLL STREET: 220 Montgomery Street, Suite 2200 CITY: San Francisco STARE: California COUNTRY: United States of America
                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/073,384C
FILING DATE: 04-JUN-1993
CLASSIFICATION NUMBER: US/08/073,384C
RPROR APPLICATION DATA:
APPLICATION NUMBER: US 07/986,330
FILING DATE: 07-DEC-1992
ATTORNEY/AGENT INFORMATION:
RAGISTRATION NUMBER: 32,837
REFERENCE/DOCKET NUMBER: FORS-00613
TELECHONE: 415/705-8410
TELECHONE: 415/705-8410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        196 gatactttcatggtggaagatgcagtggaagcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FORS-00613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
BDIUM TYPE: Floppy disk
CMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2, Application US/08073384C Patent No. 5541311 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; MOLECULE TYPE: DNA (genomic)
US-08-073-384C-2
INFORMATION FOR SEQ ID NO: 20:
                                                                                                                              DNA (genomic)
                                                                                                                                                                                                            Query Match 2.2%;
Best Local Similarity 51.9%;
Matches 80; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: 415/397-8338
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
               SEQUENCE CHARACTERISTICS:
LENGTH: 32207 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       inear
                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS:
                                                                                                                           ; MOLECULE TYPE:
US-08-757-669A-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94104
                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-073-384C-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                          Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Óγ
                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db 20886 GAGGATGACGAGGAGGATGACGAGGAGGATGACGAGGAGGATGATGATGAGGAGGAGGAGGAG 20827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         136 gaggetgtggagetggatgatgggggeagetgtgeceaaggagtttgceaateceaecgat 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     76 gaggacgacacggcttcaggagagcatgaagtccagattgaaggggtccacgtgggccta 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Changy Yuan
APPLICANT: Changy Yuan
APPLICANT: Bohenzky, Roy A.
APPLICANT: Russo, James J.
APPLICANT: Edelman, Isidore S.
APPLICANT: Moore, Patrick S.
TITLE OF INVENTION: UNIQUE ASSOCIATED KAPOSI'S SAKCOMA VIRUS
TITLE OF INVENTION: SEQUENCES AND USES THEREOF
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2; Length 32207;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/757,669A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20766 AATGAGGACGAGGATGACGAGGAGGAGGACA 20733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              196 gatactttcatggtggaagatgcagtggaagcca 229
                                                                                                                                                                                                                                                                                                                                                                                                                                Score 35.6; D
Pred. No. 5.6;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: Cooper & Dunham LLP
STREET: 1185 Avenue of the Americas
CITY: New York
      APPLICATION NUMBER: US/08/770,379
                                                               ATTORNEY AGENT INFORMATION:
NAME: White, John P.
REGISTRATION NUMBER: 28,678
REGISTRATION NUMBER: 52342
TELECOMMUNICATION INFORMATION:
TELECHONE: (212) 278-0400
TELEFAX: (212) 391-0525
INFORMATION FOR SEQ ID NO: 20: SEQUENCE CHARACTERISTICS:
LENGTH: 32207 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
ODERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 20, Application US/08757669A Patent No. 6183751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: White, John
REGISTRATION NUMBER: 28,678
REFERENCE/DOCKET NUMBER: 4518:
TELECOMNUNICATION INFORMATION:
TELEPHONE: (212) 278-0400
TELEPHONE: (212) 391-0525
                                                                                                                                                                                                                                                                                                                             TOPOLOGY: linear MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 2.2%;
Best Local Similarity 51.9%;
Matches 80; Conservative
                                                                                                                                                                                                                                                                                                      STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
CLASSIFICATION: 424
                             FILING DATE:
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New York
: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-757-669A-20/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Nev
                                                                                                                                                                                                                                                                                                                                                                        US-08-770-379-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δλ
```

```
;;
Query Match 2.1%; Score 35.2; DB 1; Length 2496;
Best Local Similarity 62.5%; Pred. No. 1.9;
Matches 55; Conservative 0; Mismatches 33; Indels 0; Gaps
```

Qy

qq

Search completed: March 8, 2002, 02:39:31 Job time: 10454 sec

Run on:

```
/tissue_type="neuroblastoma cells"
/lab_host="DH10B"
/note="Corgan: DH10B"
/note="Corgan
                                                                                                                                                                                                                                                                                              BES90388 SB128 Sug
A2979001 ZBN0255J05
AL16779001 ZBN0255J05
AL137278 TETTAGGGG
EBS68972 BB586972
AL313898 TETTAGGGG
AR003981 WMS MWSCU
BB591243 BB593243
AU207190 AU207190
BF641087 WF032A091
BI365498 RE53026.5
BB590911 BB590911
                                            B1296940 UT R-DK0-
T10079 seq1296 b4H
AW418091 55608 MAR
BF412623 UT -R-BT1-
A1372624 EST175519
T08271 EST06162 In
BE097508 UT -R-B01-
AU067579 AU067579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BF277036 GA_Eb002
C68924 C68924 Yuji
AU056191 AU056191
AL347771 Tetraodon
                                                                                                                                                                                                 AU220193 AU220193
BG056004 naf86b06.
BE656418 UL-M-BH0-
T08675 EST06567 In
BI134483 UL-M-BH3-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Englayers (Brazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Metheria; Metazoa; Cimates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 972)
11,4,8., Gruber,C., Jessee,J. and Polayes,D.
11,4,8., Gruber,C., Jessee,J. and normalization
11,4,8., Gruber,C., Jessee,J. and Polayes,D.
11,4,8., Gruber,C., Jessee,J.
11,4,8., Gruber,C.
11,4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AL523335 972 bp mRNA EST 13-FEB-2001
AL523335 LTI_NFL003_NBC3 Homo sapiens cDNA clone CSODC001YN02 3
prime, mRNA sequence.
AL523335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="CSODC001YN02"
/clone_lib="LTI_NFL003_NBC3"
/sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                         BB593243
AU207190
BF641087
                                                                                                                                                                                                                                                                                                                                            CNS01UGB
CNS05LV9
                                                                                                                                                                                                                                                                                                                                                                                   C57850
BB586972
CNS04275
AK003981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B13672''
BB5909''
                                                                                                                                                                                                         AU220193
BG056004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C68924
AU056191
                                                                                                              BF412623
AI372624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BF277036
                                                                                                                                                                                                                                                                                      B1134483
                                                                                                                                                                                                                                                                                                        BE590388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CNS05PC2
                                                                                                                                                                     BE097508
                                                                                                                                                                                           AU067579
                                                                                                                                                                                                                                                                                                                        AZ979001
                                                                                            AW418091
                                                                                                                                                                                                                                                                  r08675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AL523335.1 GI:12786828
                                                                                            100110110110110
                                                                                                                                                                                                                                                                                                                                                                                                     10
13
12
human.
                                                                                                                                                                                                                                                                                                            124.6
104.6
104.6
100.6
92.8
92.8
91.2
                    265.4
2251.8
226.4
2246.8
2249.8
2229.2
2228.4
226.6
226.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 87.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 1
AL523335/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
    O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AL52335 AL52335
AL52336 AL52336
AL520154 AL529154
AL563357 AL563357
BG703339 G02585286
BI341271 368657 MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AW663941 hi73h10.x
BF775076 285128 MA
BI394002 pgpln.pk0
AA349847 EST57001
                                                                                                                                         March 8, 2002, 00:47:58; Search time 3543.72 Seconds (without alignments) 4985.174 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EST377718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                          ....cgaactctggctctcaggaa 1644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA349847
AW965645
                                                                                                                                                                                                                                                                                                                                                                                             22703874
                            GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                      11351937 seqs, 5372889281 residues
                                                                                                                                                                                                                                                                                                                                                                                               hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AL563357
BG703339
BI341271
AW173250
AW663941
BF775076
BI394002
AA349847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AL523336
AL529154
                                                                                                                                                                                                                                                              1 atggaggagtacttattcca....
                                                                                                        - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AL523335
                                                                                                                                                                                                                                                                                                  IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_gss_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_gss_fun:*
em_gss_hum:*
em_gss_inv:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_gss_pro:*
em_gss_rod:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_gss_pln:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_gss_vrt:*
                                                                                                                                                                                                                                                                                                                                                                                                                                     length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-911-667A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1: em_estfun:*
2: em_esthum:*
3: em_estin:*
4: em_estom:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            %
Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_htc:*
gb_est1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_estpl:*
em_estba:*
em_estro:*
em_estro:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gb_est2:*
gb_htc:*
gb_gss:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                638
570
487
578
468
662
371
536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   51.7
44.6
35.1
34.5
32.6
30.2
28.2
28.2
26.6
25.7
24.3
22.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10:
11:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                 Total number of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         733.6
576.6
557.6
536.6
496.4
463.6
423.2
399.4
364.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       850.6
                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                  Perfect score:
                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                              OM nucleic
                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                                                                              Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database
```

Result

No. O

O

8 11 12 12

υυ

```
Craniata; Vertebrata; Euteleostomi;
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                              420
               S
                                                                                                                                                                                                                                                                                                                                                     290
                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                 350
                                                                                                                                                                                                                                                                                                                                        09
                                                                                                                                                                                                                                                                                                                           Gaps
         EST 13-FEB-2001 sapiens CDNA clone CSODC001YN02
                                                                                                                                                                                                                                                                                                                                                                                                                                                        atgatgatcetcagcatcetggcaccacagctgcattgcgagtggaggctcccaagctgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            camo geattactgaccteggtggtcttgtaggcatgatgtccagctccacgctctgg
                                                                                                                                                                                                                                                                                                                                       : www.genoscope.cns.fr.
                                                                                                                                                                                                                                                                                                          Ouery Match
Best Local Similarity 98.0%; Pred. No. 5.2e-179;
Matches 782; Conservative 3; Mismatches 7; Indels 6;
                                                                            1 (bases 1 to 1022)
Lilwish Gruber, C. Jessee, J. and Polayes, D. Lill-length CDNA libraries and normalization Unpublished (2001)
                                                                                                                Contact: Genoscope
Genoscope - Centre National de Sequencaye
BP 191 91006 EVRY cedex - France
Email: segrefégenoscope.cns.fr, Web : www.
Location/Qualifiers
                                                               Homo sapiens
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                    Homo
            mRNA
            AL523336, 1022 bp mRN
AL523336 LTI.NFL003_NBC3 HC
prime, mRNA sequence.
AL523336 GI:12786829
                                                                                                                                                  1, .1022
                                                                                                                                                                                                                                                                                   180
                                                         human.
                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                      source
RESULT 2
AL523336
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                              111
                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                ORGANISM
                                                                                     REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                    ACCESSION
                                          VERSION
KEYWORDS
SOURCE
                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                   QC
                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                        οχ
                                                                                                                                                                                                                                                                                                                                             ò
Technologies, a division of Invitrogen 9800 Medical Center Drive Rockville, Maryland 20850, USA Fax : (1) 301 610 and 21 Enail : fliang@lifetech.com URL : http://fulllength.invitrogen.com" 7 others
                                                                          ::
                                                                                                                                                                                                                                                                                                                                                                               1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tctggctgcctgaaagtgcaaggtatgatgtgctgtcagggaaccaggaaaaggcaalcy 826
                                                                                                                                               886
                                                                                                                         Gaps
                                                                                                                    ccaccttaaagaggatagcaactgaaaacggagctcccatgccgctggggaaactcatca
                                                                          1;
                                                            972;
                                                            Length
                                                                          Indels
                                                           Score 850.6; DB 10;
Pred. No. 2.7e-209;
4; Mismatches 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51.7%;
ilarity 98.4%;
Conservative
                                                                      Similarity
                                   236
                                                                             864;
                                                                Match
                                                                Query Match
Best Local 3
Matches 864
                                                                                                                                                                                                                                                                                                                                                                                    1367
                                                                                                                                                                                                                                                                                                                                                                                                                 1427
                                                                                                                                                                                                                                                                                                                                                                                                                              313
                                                                                                                                                                                                                                                                                                                                                                                                                                             1487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   133
                                                                                                                                                                                                                                                                                                                                                                                                                                                          253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1607
                                                                                                                                                                                                                                       1067
                                                                                                                                                                                                                                                                    1127
                                                                                                                                                                                                                                                                                                1187
                                                                                                                                                                                                                                                                                                                                                        1307
                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                           1001
                                                                                                                                                                                                                                                      673
                                                                                            767
                                                                                                         972
                                                                                                                        827
```

Q

QQ ò QQ δy

g δ Q ΟŻ q δ

qq οy Db δλ

Dp ò qq Ω

QQ οÿ q ò

Q ò qq ò QQ οy 4

Ξ

290

650

g ò Q ò g ò

ò

421

ò

```
Homo sapiens
Bukaryotas; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 642)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gggaaatatctcagaccagtacggcaggaaaacagggctgaagatcagcgtgctgtggac 479
                                                                                                                                                                                                                                                                                                                                                          602 GGGAAAWATYTCAGACCAGTACGGCAGGAAAACARGGCTGAAGATCAGCGTGCTGTGGAC 661
                                                                                                                                                                                AL563357 642 bp mRNA EST 16-FEB-2001
AL563357 LTI_NFL001_NBC4 Homo sapiens CDNA clone CSODD004YD17
                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Genoscope
Contact: Genoscope
Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: seqrefégenoscope.cns.fr, Web : www.genoscope.cns.fr.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
       Length 778;
                                                   Indels
           10;
       Query Match 35.1%; Score 576.6; DB 10; Best Local Similarity 97.3%; Pred. No. 2e-138; Matches 581; Conservative 13; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/do xxef="Lexon:9606"
/clone="CS0DD004VD17"
/clone_lib="LTI_NFL001_NBC4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AL563357.1 GI:12912671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        prime, mRNA sequence.
AL563357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 4
AL563357/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                          QQ
                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                         Db
                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                     ŏ
                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /issue_type="neuroblastoma cells"
/issue_type="neuroblastoma cells"
/iab_host="neuroblastoma cells"
/iab_host="neuroblastoma cells"
/iab_host="neuroblas"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens

Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostoml;

Bukaryota, Metazoa; Chordata; Catarrhini; Hominidae; Homo.

(Chases 1 to 778)

Li,W.B., Gruber,C., Jessee,J. and Polayes,D.

Bull-tength CDNA libraries and normalization

Unpublished (2001)

Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AL529154 T78 bp mRNA EST 13-FEB-2001 AL529154 LTI_NPL001_NBC4 Homo sapiens CDNA clone CS0DD004YD17 prime, mRNA sequence. AL529154 GI:12792647 EST.
                                                                                                                                                                                                                        009
                                                                                                                                                                                                                                                                                                               099
                                                                                                                                                                                                                                                                                                                                                       889
                                                                                         709
                                                                                                                                   540
                                                                                                                                                                                769
CAGGTGGCATTGCTGACCTCGGTGGTCTTTGTAGGCATGATGTCCAGCTCCACGCTCTGG 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genoscope - Cartre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: segref@nenoscope.cns.fr, Web : www.genoscope.cns.fr.
                                                                                                                                                                                                                        /organism-"Homo sapiens"
/db_xref="taxon:9606"
/clone="cSODD004YD17"
/clone_lib="trI_NFL001_NBC4"
/sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
1. 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1005 AATGCAAGGKATGATGTG 1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781 agtgcaaggtatgatgtg 798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    human.
```

DEFINITION

RESULT AL529154 LOCUS

ACCESSION

VERSION KEYWORDS

661 890 950

g

ò

721

a ò ORGANISM

SOURCE

TITLE JOURNAL REFERENCE AUTHORS

COMMENT

source

FEATURES

BASE COUNT

ORIGIN

539

рe

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 638)
                                                                                                         Shiraki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               384
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                              NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MCC)
Unpublished (1999)
                                                                                                                                  box sequence stop: 638.

UNA Sequence continue interest consociation can found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Plate: LLAMN0718 row: 1 column: 22
High quality sequence stop: 638.

Location/Qualifiers

1. 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gecaateceacegatgataettteatggtggaagatgeagtggaageeattggetttgga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: cgapbs-remail.nih.gov
Tissue Procurement: Miklos Palkovits, M.D., Ph.D.
CDNA Library Preparation: Michael J. Brownstein (NHGRI), S
Toshiyuki and Piero Carninci (RKREN)
'DNA Library Arrayed by: The 1.M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
                                                                                                                                                                                                                                                                                                                                                                                                                         Score 536.6; DB 11; Length 638;
Pred. No. 4.1e-128;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                             Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                           32.6%;
98.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                    133
                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Simi
Matches 605;
                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
SOURCE
ORGANISM
                                                AUTHORS
TITLE
JOURNAL
                                       REFERENCE
                                                                                                                                                                                                        FEATURES
                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     òλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                 Anote—"Organ: Durain: Vector: pCMVSPORT 6; 1st strand cDNA was primed with a Not1-oligo(dT) primer. Five prime end was primed with a Not1-oligo(dT) primer. Five prime end cancined, double-stranded cDNA was digested with Not I and colored into the Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies. Confact: Feng Liang Life Technologies. Confact: Feng Liang Life Technologies, a division of Invitrogen 9800 Medical Center Drive Rockville, Maryland 20850, USA Fax: (1) 301 610 8311 Email: filang@lifetech.com URL: 1141/FullLegth.invitrogen.com"
                                                                                                                                                                                        -:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BG703339 638 bp mRNA EST 07-MAY-2001
602685286F1 NIH_MGC_95 Homo sapiens cDNA clone IMAGE:4817829 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    getttgteatetteteettetgeageeteetgetgtttatetgtgttggaag-aaatgtg 1275
                                                                                                                                                                                                                                                  agtacctgagtgaggaggattacatggacttgctgtggaccaccctctctgagtttccag 1156
                                                                                                                                                                                                                                                                                                                                               103
                                                                                                                                                                                                                                                                       582 AGTAC 'TGAGTGAGGAGGATWACATGGACTTGCTGTGGACCACCCTCTGAGTTTCCAG 523
                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ::
                                                                                                                                                                   DB 10; Length 642;
                                                                                                                                                                                        Indels
  /tissue_type="neuroblastoma cells"
/lab_host="DH10B"
                                                                                                                                                                  Score 567.6; DB 10;
Pred. No. 3.9e-136;
2; Mismatches 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:13975571
                                                                                                                                                                     34.5%;
95.9%;
                                                                                                                                                                       0uery Match
Best Local Similarity 95.9
Matches 584; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA sequence.
BG703339
BG703339.1 GI:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tctcaggaa 1644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTCAGGAA 34
                                                                                                                               149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1576
                                                                                                                                                                                                                                                                                                                                                                                                                         1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       42
                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                1037
                                                                                                                                                                                                                                                        1097
                                                                                                                                                                                                                                                                                                                                        1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT BG703339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                    642
                                                                                                                                                                                                                                                                                               1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERS TON
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dβ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ογ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ω
                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                      δλ
                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                               οy
```

9

g

g ò g ŏ q

ò

```
Tumor Gene Index

Lopublished (1997)
Contact: Robert Strausberg, Ph.D.
Contact: Robert Strausberg, Ph.D.
Contact: Robert Strausberg, Ph.D.
Contact: Robert Strausberg, Ph.D.
Email: cgapbs.remail.nih.gov
This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information.
Trace considered overall poor quality
Seq primer: -40UP from Gibco
High quality sequence stop: 1.
High quality sequence stop: 1.
Location/Qualifiers
1. 487
//db_xref*"taxon:9606"
//db_xref*"taxon:9606"
//clone="IMAGE:2663997"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Organ: pooled; Vector: pT7T3D-Pac (Pharmacia) with a modified polylinker; Site_1: Not I; Site_2: Eco RI; Equal amounts of plasmid DNA from three normalized libraries (fetal lung NbHL19W, testis NHT, and B-cell NCI CGAP_GCBI) were mixed, and ss circles were made in vitro. Following HAP purification, this DNA was used as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 487)
NCI-CAP http://www.ncbi.nlm.nih.gov/ncicyap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AW173250 487 bp mRNA EST 16-NOV-1999 xj85b11.xl Soares_NFL_T_GBC_S1 Homo sapiens cDNA clone IMAGE:2663997 3' similar to TR:092217 092217 SV2 RELATED PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                           1038
                                                                                                                                                                                                                                                                                                                                                gtctgcggcatctccagtcggaagaaggctgtagaggcaaaatgcagcctggcctgcgag 1098
                                                                                                                                                                                                                                                                                    61 CTGGCTGTGTTTGTGATGCCCAGCCTGGGCTGGCTTGGCTGCTCCTTCTTTCAGCTGTC 120
                                                                                             /clone_lib="Soares_NFL_T_GBC_S1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1159 gtccttgtgactctgtggattattgaccgc 1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;, mRNA sequence.
AW173250
AW173250.1 GI:6439198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         numan.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 7
AW173250/C
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                      1099
                                                                                                                                                                                                                                                                                                                                                        1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                            Op
                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                               QΩ
                                                                                                                                                                  οy
                                                                                                                                                                                                g
                                                                                                                                                                                                                                ò
                                                                      g
                                      ò
                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Casas, E.,
                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetatiodactyla; Suina; Suidae; Sus.

1 (bases 1 to 570)

1 (bases 1 to 570)

2 Freking, B.A., Rohrer, G.A., Smith, T.P.L., Casas, E. Stone, R.T., Heaton, M.P., Grosse, W.M., Bennett, G.A., Laegreid, W.W. and Keele, J.W.

Est discovery in swine
Unpublished (2000)

Contact: Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: smitheemail.marc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the ·minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         619 getaaatgtattttgetgattgaggtattetggggeeategggaeagtgttegaggtegte 678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 679 ctggctgtgttcgtgatgcccagcctgggctggcgttggctgctcatcctccagctgtc 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                      30-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 570;
                                                                                                                                                                                                                                                                                                                              CDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 496.4; DB 11;
Pred. No. 9.8e-118;
0; Mismatches 46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
TTEL: 402 762 4366
Fax: 402 762 4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Sus scrofa"
/db_xref="taxon:9823"
/clome_lib="MARC 2PIG"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BACKWARD: GTTTTCCCAGTCACGACG
Plate: 108 row: D column: 4
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                B1341271 570 bp mRNA
368657 MARC 2PIG Sus scrofa
B1341271
B1341271.1 G1:15034560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30.2%;
91.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          524; Conservative
                                                                                                                                                                                                          agtteetteecatga 610
                                                                                                                                                                                                                                        624 AGTACCTTCCCATGA 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                114
                                                                                                                                                                                                                                                                                                                                                                                                    pig.
                                                                                                                                                                                                                                                                                                                                                                                   EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                            969
                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                    4 2 0
                                                   445
                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                         RESULT
BI341271
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                    VERSION
```

β ò

ò

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              285T 2
285128 MARC 3BOV Bos taurus CDNA 5', mRNA sequence.
BF775076
BF775076.1 GI:12122074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ouery Match 26.6%; Score 436.8; DB 10; Best Local Similarity 99.1%; Pred. No. 2.6e-102; Matches 449; Conservative 0; Mismatches 3;
                                                                                                                                  /clone_lib="Soares_NFL_T_GBC_S1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
                      464.
                                                                                                                 /clone="IMAGE:2977987"
                                     Location/Qualifiers
Seq primer: -40UP from Gibco
High quality sequence stop: 4
                                                                                                                                                         /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                               137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       278
                                                                                                                                                                                                                                                                                                                                                                                                                   COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1552
                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
BF775076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                   BASE CC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            αq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ολ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                0;
                The driver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; Euteleostomi;
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AW663941 578 bp mRNA EST 06-APR-2000
hi73h10.x1 Soares_NFL_T_GBC_S1 Homo sapiens CDNA clone
IMAGE:2977987 3' similar to TR:092217 092217 SV2 RELATED PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens

Bukaryota, Metazoa: Chordata; Craniata; Vertebrata; Euteleostomi

Mammalia: Butheria; Primates; Catarrhini; Hominidae: Homo.

1 (bases 1 to 578)

NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.

NALional Cancer Institute, Cancer Genome Anatomy Project (GGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tumor Gene Index Unpublished (1997)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1516 | tgctttttgcccattgagaccaaaggcggaggactgcagggagtccagccaccgggagtgg | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 | 1575 |
                                   made
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1455
              tracer in a subtractive hybridization reaction. The dri was PCR-amplified CDNAs from pools of 5,000 clones made from the same 3 libraries. The pools consisted of 1.M.A.G.E. clones 297480-302087, 682632-687239, 72648-728711, and 729086-731399. Subtraction by Bento Soares and M. Fatima Bonaldo. " I others
                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                          Length 487;
                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                               DB 10;
                                                                                                                                                                                                               Score 463.6; DB 10
Pred. No. 2.8e-109;
0; Mismatches 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AW663941.1 GI:7456480
                                                                                                                                                                                                                 Ouery Match 28.2%;
Best Local Similarity 96.9%;
Matches 472; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;, mRNA sequence.
AW663941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1636 tctcagg 1642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTCAGG 1
                                                                                                                                            126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AW663941/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           307
                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                    1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
```

ρp

a Q

QQ ò

qq ò Д ò

á qq ò g δ g ò Pb

ò

÷

```
tch 24.3%;
al Similarity 79.0%;
475; Conservative (
                                                                                                   mRNA sequence.
BI394002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
Matches 475; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             160
                                                                                                                                                  chicken.
                                                                                                                                        EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                          VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                          LOCUS
                                      10
                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                              ACCESSION
                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                FEATURES
                                               BI394002
                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                              COMMENT
                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
    g
                                                                                                                                                                         Email: smith@email.marc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                     //incre="Vector: pCMV SPORT6; Site_1: Xba1; Site_2: Xho1; //note="Vector: pCMV sport6; Library made from pooled tissue from marrow, alveolar macrophage, ovary, fetal semitendonosus muscle, and fetal longissimus muscle."
Sequence evaluation of four pooled-tissue normalized bovine cDNA libraries and construction of a gene index for cattle Genome Res. 11 (4), 626-630 (2001) 21180013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  487 tatggcatccttagtgcatttgcgcccgtgtatagctggatcctggtgctccggggcctg 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aggtatgatgtgtgtcagggaaccaggaaaggcaatcgccaccttaaagaggatagca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .:
0
                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 468;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ggcaaaatgagggaccttttcacacccccattttagatggacaactttg 954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 11;
                                                                                                                   Contact: Smith TPL
USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
TPL: 402 762 4366
Fax: 402 762 4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 423.2; DB 1
Pred. No. 7.9e-99;
0; Mismatches 28
                                                                                                                                                                                                                                                                                                  /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="MARC_3BOV"
/Lissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                       PCR PRIMERS
FORMARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 86 row: E column: 5
Seg primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                           and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                               25.7%;
llarity 94.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                       87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       440;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S:
Matches 440;
                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              299
                                                                                                   JOURNAL
MEDLINE
COMMENT
             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                  FEATURES
                                                                               TITLE
```

q

ò g

ŏ

δ g ò Q òγ q ö a ŏ g ò

```
/note="Vector: pCMVSPORT6; Library made from equivalent pools of total RNA isolated from each tissue at different ages. Single pass sequencing from 5'-end"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="Pituitary Gland/Hypothalamus/Pineal Gland"
/dev_stage="Embryonic (d12,d14,d19); post-hatch (w1,w3,w5,w7,w9)"
                                                                                                                                   B1394002 662 bp mRNA EST 06-AUG-2001 pppln.pk013.c4 Normalized Chicken Pituitary/Hypothalamus/Pineal Library Gallus gallus cDNA clone pgpln.pk013.c4 5' similar to gblAAC78627.1 (AF060173) SV2 related protein [Rattus norvegicus],
                                                                                                                                                                                                                                                                                                                                                          Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1103 tgagtgaggagttacatggacttgctgtggaccaccctctctgagtttccaggtgtcc 1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1163 ttgtgactctgtggattattgaccgcctggggcgaagaagacatggccctgtgctttg 1222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1043 goggcatctccagtcggaagaaggctgtagaggcaaaatgcagcctggcctgcgagtacc 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 662)
Porter, T.E. and Cogburn, L.A.
FSTS from Normalized Chicken Pituitary/Hypothalamus/Pineal CDNA
library USDA/IFAFS Animal Genome Project
Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                       Gallus gallus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
Archosauria; Aves; Neognathae; Galliformes; Phasianidae;
Phasianinae; Gallus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 662;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 399.4; DB 11; Length.
Pred. No. 1.3e-92;
0; Mismatches 126; Indels
/strain="Commercial broiler chicken"
/db_xref="taxon:9031"
/clone="pgpln.pk013.cq"
/clone=lib="Normalized Chicken
pituitary/Hypothalamus/Pineal Library"
/sex="Male and Female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gourn@udel.edu, www.chickest.udel.edu.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Larry A. Cogburn
University of Delaware
Townsend Hall, Newark, DE 19717, USA
Tel: 302-831-1335
Fax: 302-831-2822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /lab_host-"E. Coli EMDH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1. .662
/organism="Gallus gallus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: cogburn@udel.edu,
                                                                                                                                                                                                                                                                             BI394002.1 GI:15087284
```

Dp δλ QQ ò g

Dp ΟÝ q ŏλ

δλ qq ò

```
ENKARYOTCH; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

EL 1 (bases 1 to 536)

I (bases 1 to 536)

RS Hegde, P., Qi.R., Abernathy, K., Dharap, S., Gaspard, R., Gay, C., Holt (a. E., Abernathy, K.)

I.E., Saeed, A.I., Sharov, V., Lee, N.H., Yeatman, T.J. and Quackenbush, J.

Assessment of gene expression patterns in a model of colon tumor metastasis using a 19,200 element CDNA microarray

Unpublished (2000)

Contact: John Quackenbush

The Institute for Genomic Research

The Institute for Genomic Research

The Institute for Genomic Research

The 1301 838 3528

Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AW965645 536 bp mRNA EST 01-JUN-2000
Exr37771P MAGE resequences, MAGI Homo sapiens cDNA, mRNA sequence.
AW965645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1224
Gaps
                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 536;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
17.0%; Score 278.8; DB 10; Length
Best Local Similarity 99.3%; Pred. No. 1.9e-61;
Matches 280; Conservative 0; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers

1. 536

About an amount and a sapiens                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AW965645.1 GI:8155481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: johnq@tigr.org
Plate: 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Seq primer: Reverse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 12
AW965645
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                               1045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                      qq
                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
/db_xref="ATCC (inhost):150872"
/db_xref="taxon:9606"
/db_xref="taxon:9606"
/scav="female"
/dev_stage="infant"
/note="corgan: brain; vector: lafmid BA; Site_1: HindIII;
/site_2: NotI"
/site_2: NotI"
/site_3: NotI"
/site_3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fax: 3018699423
Email: arkerlav@tigr.org
Email: arkerlav@tigr.org
Cor clone availability, additional sequence and expression
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related to this EST, please check the TIGR Human Gene
information related the TIGR Human Gene
information related to the TIGR Human Gene
information related the TI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA349847 371 bp mRNA EST 21-APR-1997 EST57001 Infant brain Homo sapiens CDNA 5' end similar to similar to C. elegans hypothetical protein, cosmid ZK637.1, mRNA sequence. AA349847.1 GI:2002320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 371)
Adams, M.D., Kerlavage, A.R., Fields, C. and Venter, J.C.
3,400 expressed sequence tags identify diversity of transcripts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                            Score 364.8; DB 10; Length 371;
Pred. No. 9.3e-84;
); Mismatches 5; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MD 20850 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bioinformatics
The Institute for Genomic Research
Tylz Medical Center Drive, Rockville,
Tel: 3018699056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  from human brain
Nature Genet. 4, 256-267 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Other_ESTs: EST57000
Contact: Kerlavage, AR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22.2%;
98.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 98.7
Matches 366; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93364420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1643 a 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                              1463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 1.
AA349847
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
```

```
human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                   1350
                                                                                                         1410
                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                            62
                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                            AA350545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                              LOCUS
                                                                                                                                  QQ
                                                                                                                                                                δ
                                                                                                                                                                                          qq
                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                      qq
                                                                            qq
                                                                                                         δλ
                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Single pass sequencing. Bases called and trimmed with phred v0.980904.e. Vector identified by cross_match with the .minscore 20 and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                        Bovidae; Bovinae; Bos.

1 (bases 1 to 372)

Smith,T.P.L., Grosse,W.M., Freking,B.A., Roberts,A.J., Stone,R.T.,
Smith,T.P.L., Bennett
Casas,E., Wray,J.E., White,J., Cho,J., Fahrenkrug,S.C., Bennett
G.G., Heaton,M.P., Laegreid,W.W., Rohrer,G.A., Chitko-McKown,C.G.,
Pertea,G., Holt,I., Karamycheva,S., Liang,F., Quackenbush,J. and
Keele,J.W.
                                                                                                                                                                                                                                                                                                                                                                                          Eukaı,ota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammaiia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="Vector: pcMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled tissue from day 20 and day 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence evaluation of four pooled-tissue normalized bovine cDNA libraries and construction of a gene index for cattle Genome Res. 11 (4), 626-630 (2001)
                                                                              Gaps
                                                                                                                                                                                                                                                                                             25-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 377;
                                                                                                                                                                                                                                                                                       AW345918 377 bp mRNA EST
15969 MARC 4BOV Bos taurus CDNA 5', mRNA sequence.
AW345918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                1603 cacggigcaggigitaccaggicgaaciciggcicicaggaa 1644
                                                                                                                                                                                                             USDA, ARS, US Meat Animal Research Center PO Box 166, Clay Center, NE 68933-0166, US Tel: 402 762 4366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 270; DB 10;
Pred. No. 3.2e-59;
0; Mismatches 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        73 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="WARC 4BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 8 row: B column: 9
Seg primer: ATTTAGGTCACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      130 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              y Match 16.4%;
Local Similarity 86.8%;
Les 309; Conservative (
                                                                                                                                                                                                                                                                                                                                          AW345918.1 GI:6843628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           112 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                         Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21180013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                 DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE
COMMENT
                                     1423
                                                                                                                                                                                                                                                                                     AW345918
LOCUS
                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                     g
                                                                                                                                                   ŏ
                                                                                                                                                                            q
                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                 g
                                                                g
                                    ò
```

1290 cttcattgcaagagcgtttatttctggaggctttcaagcggcatatgtttacacacctga 1349

ò

```
Tanamaniata, matterial, rimmates, Caldininia, Monthalian, Monthalian, Caldinian, Monthalian, Caldinian, Monthalian, Caldinian, Monthalian, Caldinian, Monthalian, Caldinian, Cal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Initial assessment of human gene diversity and expression patterns based upon 83 million nucleotides of CDNA sequence Nature 377 (6547 Suppl), 3-174 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         For clone availability, additional sequence and expression information related to this EST, please check the TIGR Human Gene Index (http://www.tigr.org/tdb/hgi/hgi.html)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA350545 402 bp mRNA EST 21-APR-1997 EST57879 Infant brain Homo sapiens cDNA 5' end, mRNA sequence. AA350545 GI:2002864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9712 Medical Center Drive, Rockville, MD 20850 USA
Tel: 3018699056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="ATCC (inhost):151205"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Other_ESTs: EST57877 EST57878 THC98959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The Institute for Genomic Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: arkerlav@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Seq primer: M13 Reverse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Kerlavage, AR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fax: 3018699423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bioinformatics
```

```
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 258)
Auffray, C., Behar, G., Bois, F., Bouchier, C., da Silva, C., Deviques, M.D., Duprat, S., Houlgatte, R., Jumeau, M.N., Lamy, B., Lorenzo, F., Sebastiani Kabaktchis, C. and Tessier, A.
IMAGE: molecular integration of the analysis of the human genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostumi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
F08438 258 bp mRNA EST 22-FEB-1995
HSCZUBO81 normalized infant brain cDNA Homo sapiens cDNA clone
c-zub08, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genexpress_library_idt: C: Genexpress_sequence_idt: ylc-zub08
Seq primer: (-21)MM3_universal.
Location/Qualifiers
                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genethon Centre de recherche sur le Genome Humain
1,rue de l'Internationale, BP60 91002 EVRY Cedex, FRANCE
                                                                                                                                                      :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and its expression
C. R. Acad. Sci. III, Sci. Vie 318 (2), 263-272 (1995)
                                                                                                                             Length 402;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone="c-zub08"
/clone_lib="normalized infant brain cDNA"
/sex="Female"
                                                                                                                                                      6; indels
                                                                                                                              Score 265.4; DB 10;
Pred. No. 5e-58;
                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: genexpress@genethon.fr
Single read.
                                                                                                                               16.1%;
ilarity 97.8%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genexpress-Genethon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     F08438
F08438.1 GI:677005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Genethon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fax: 33160778698
                                                                                                                                            al Similarity
269; Conservat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C. R. Acar
95277534
                                                                                  72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST
                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESS 10N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                    1370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
F08438
                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                 ōλ
```

```
/tissue_type="total brain"
/dev_stage="3 months old"
/note="Corgan: brain" vector: lafmid BA; Site_1: HindIII;
/note="Corgan: brain; vector: lafmid BA; Site_1: HindIII;
/note="Corgan: brain; vector: lafmid BA; Site_1"
isolate=muscular atrophy patient; tissue_type=total brain
isolate=muscular atrophy patient; tissue_type=total
cloned 5' -3' into the HindIII -> NotI sites of the
lafmid BA vector. Clone library from B.Soares, Psychiatry
lafmid BA vector. Clone library from B.Soares, Psychiatry
Bent. Columbia University, USA. Normalization_method:
Bento Soares, P.N.A.S in press"
1 others
                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                          Query Match
Best Local Similarity 99.2%; Pred. No. 1.6e-55;
Matches 256; Conservative 0; Mismatches 2; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8, 2002, 00:48:17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Search completed: March
Job time: 4640 sec
                                                                                                                                                           57
                                                                                                                                                             BASE COUNT
                                                                                                                                                                                                                                                                                                                ρp
                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                       Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            óλ
                                                                                                                                                                                                                                                                                                                                               ò
```

```
i AF015958 Oryctolagus cunicu
AB018279 Homo sapiens mRNA
AX074148 Sequence 4 from Pa
L10362 Rattus norvegicus sy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="MEEDLFOLRQLPVVKFRRTGESARSEDDAASGEHDVQIEGVRVG
LEAVELDDGAAVPKEFANPTDDTFWVEDAVEN/GGRRFQWKLSVLTGLAWMADAMEMM
LISILARQLHCEWRLPSWQALLTSVVPTIGWNSSSTLMGNISDQYGRKTGLKISVFWT
LYYGILSARPROYSMILVLRGLVGFGIGGVPQSVTLYABFLDWRARAKOILLIESVFWA
IGTVFEVLLAVFVWPSLGWRWLLLLSAAPLLVFAVLCFWLPESARYDYLSGNOEKAIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TLKRIATENGAPMPLGKLIISRQEDRGKMRDLFTPHFRWTTLLLWFWFSNASYGL
VLLTTELFQAGDVGSISSRKKAVEAKGSLAGEYLSKEDYMDLLWTTLSEFPCVLVTLW
VYDRLGKRKTRALCFVIFSLSLLLFTGIGRUVLTLLLFIARAFISGGFQAAYVYTPE
VYPTATRALGLGTGGGMARVGALITPFIAQVMLESSYVLTLAVXGGCLLAALASGFL
PIETKGRALQESSHREWGGENVGRGTNSTGVPRSNSGSOE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Janz, R., Hofmann, K. and Sudhof, T.C.
Direct Submission
Submitted (16-APR-1998) Center for Basic Neuroscience, Department of Molecular Genetics, HHMI, UT Southwestern Medical Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75235, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                  Eukaryota; Métazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                AF060173 2421 bp mRNA ROD 21-NOV-1998
Rattus norvegicus SV2 related protein (SVOP) mRNA, complete cds.
AF060173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="SVOP"
301. 1947
/gene="SVOP"
/note="synaptic vesicle protein; similar to transport
                                                                                                                                                                                                                                                                                                                                                           Janz, R., Hofmann, K. and Sudhof, T.C.
SVOP, an evolutionarily conserved synaptic vesicle protein, suggests novel transport functions of synaptic vesicles J. Neurosci. 18 (22), 9269-9281 (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MetGluGluAspLeuPheGlnLeuArgGlnLeuProValValLysPheAr 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length: 548
Gaps: 0
Percent Identity: 95.985
   2732
4353
2121
3660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="SV2 related protein"
/protein_id="AAC78627.1"
/db_xref="G1:3901268"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Rattus norvegicus"
/db_xref="taxon:10116"
/tissue_type="brain"
   1.2e-19
2.3e-19
1.3e-19
2.8e-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to: AF060173 from: 1 to: 2421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              735 g
   501.07
496.26
500.84
494.69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
                                                                                                                                                                                                             AF060173.1 GI:3901267
                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 2421)
                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 (bases 1 to 2421)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                658 c
   409.00
408.50
407.00
406.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             proteins
                                                                                                                                                                                                                                                      Norway rat.
Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ratio: 5.044
Percent Similarity: 99.453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_block:
US-09-911-667A-2 x AF060173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Quality: 2749.00
                                                                                                seq_name: gb_ro:AF060173
                                                                                                                                      seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  459
                                                                                                                                                                                                                                                                                                                                 Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
     gb_om:AF015958
gb_pr:AB018279
gb_pat:AX074148
gb_ro:RATSV2BA
                                                                                                                                                                         DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       148432 | AC00642 Drosophila melanoga 157851 | AC00569 Drosophila melanoga 157851 | AC00642 Drosophila melanoga 157851 | AC00642 Drosophila melanoga 157851 | AC003662 Drosophila melanoga 157851 | AC021862 Drosophila melanoga 2104 | AL359592 Homo sapiens mRNA; CE 81020 | AA002645 Arabidopsis thaliana 81020 | AA002128 Arabidopsis thaliana 81020 | AC024128 Arabidopsis thaliana 134092 | AC024128 Arabidopsis thaliana 134092 | AL402105 Oryaz sativa chromologis | AE00814 Agrobacterium tumefa 1186 | AE00804 Thermotoga maritima 1640 | AE00804 Thermotoga maritima 1656 | AE00804 Thermotoga maritima 17641 | AE001804 Thermotoga maritima 17641 | AE001804 Thermotoga maritima 1764 | AE00806 Sinorhizobium mellicologis | AE00806 Thermotoga maritima 1764 | AE00806 Thermotoga maritima 1766 | AE00806 Thermotoga maritima 1766 | AE00806 Thermotoga maritima 1767 | AE00806 Thermotoga maritima 1767 | AE00806 Thermotoga maritima 17708 | AE00806 Thermotoga maritima 17708 | AE00806 Thermotoga maritima 17708 | AE00806 Thermotoga maritima 1870 | U77086 Human organic cation trial 1884 | U38652 Mus musculus transmembrism 1888 | X98332 H. Sapiens mRNA for organic 1888 | X98332 H. Sapiens mRNA for organic 1888 | X98332 H. Sapiens mRNA for organic 17086 Human organic cation trial 1888 | X98332 H. Sapiens mRNA for organic 17086 Human organic cation trial 1888 | X98332 H. Sapiens mRNA for organic 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     X98332 H.sapiens mRNA for orga
AF010259 Mus musculus organic
AJ006036 Mus musculus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X98333 H.sapiens mRNA for orga
AF060174 Rattus norvegicus syn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                L01788 Rattus norvegicus synaf
L05435 Rattus norvegicus synaf
AB018278 Homo sapiens mRNA fol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rattus norvegicus SV2
                                                                                                                                                         EScore Len ! Documentation
                                                                                Results were produced by the GenCore software, version 4.5, Copyright (c) 1993-2000 Compugen Ltd.
             out_format : pfs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .1e-182
.1e-57
.2e-57
.5e-57
.1e-42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .66-40
.86-34
.96-25
.96-20
.96-27
.96-27
.76-23
.76-23
.76-23
.76-23
.76-23
.76-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2e-21
4e-21
4e-21
4e-21
8e-21
5e-21
3e-21
7e-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3428.33
11184.24
1117.90
909.82
863.92
863.92
7757.07
7757.07
7757.07
769.94
687.78
687.78
687.78
687.78
687.78
681.78
604.99
612.50
612.50
612.48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         92
92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97
             OM of: US-09-911-667A-2 to: GenEmbl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      527.50
5911.50
493.50
493.50
493.50
446.50
446.50
437.50
437.60
425.00
425.00
425.00
425.00
425.00
425.00
425.00
426.00
426.00
427.00
427.00
427.00
427.00
427.00
427.00
427.00
427.00
427.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2749.00 3 984.00 1 984.00 1 984.00 1 984.00 1 734.00 723.50 723.50 644.50 640.50 568.50 560.50 560.50
                                                                                                                                                                                                                                                                                                                                                                                                                                            Database: GenEmbl:*
Database sequences: 1472140
Database length: -34134837
Search time (sec): 1970.640000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Strd Orig
                                                 8, 2002 3:34 AM
                                                                                                                                                                                                                                                                                                                                                                                    Search information block:
Query: US-09-911-667A-2
Query length: 548
                                                                                                                                                Command line parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_in:AC004642
gb_htg:AC020509
gb_in:AE003462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_pr. HSM802697
gb_pl. AB026645
gb_pl. AB026645
gb_ba. AE001863
gb_in. CEK01F9
gb_bt. H0702G05
gb_ba. AE008141
gb_ba. AE008141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9b_in.cEzK637
9b_pat.AX123153
9b_pat.AX123179
9b_pat.AX0693179
9b_ba.AB000617
9b_ba.AB000617
9b_ba.BE004767
9b_pat.E31259
9b_ro:RATLSTP
9b_ro:RATLSTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gb_pat:A48157
gb_om:SSOCT2P
gb_pr:HSU77086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gb_ro:HSOCTK
gb_ro:AF060174
gb_ro:RATSV2A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_ro:MMU38652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_ro:RNCATTRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gb_ro: AF010259
                                                                                          About: Results
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_ro:AF060173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gb_ro:RATSV2AA
gb_pr:AB018278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_ro:RNOCT2R
gb_ro:RNOCTK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gb_pat:A48159
gb_pat:A48158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_ro:MMU6036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gb_pr:HSOCTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                score_list:
                                                       Date: Mar
```

17	gargThrGlyGluSeralaargSerGluaspaSpThrAlaSerGlyGluH 34 	
3	v — ⊟	
51	ASPASPGIYAIAAIAVAIProLySGIuPheAlaAsnProThrAspAsPTh 67 	
67	rPheMetValGluAspAlaValGluAlaIleGlyPheGlyLysPheGlnT 84 	
84 551	auservälLeuThrGlyLeualaTrpMetAlaAspAlaWetGlu 10 	
101 601	ž – ž	
134	etSerSerSerThrLeuTrpGlyAsn1leSerAspGlnTyrGlyArgLys 15 	
151 751	ThrGlyLeuLysIleSerValLeuTrpThrLeuTyrTyrGlyIleLeuSe 1 	
167 801	4-0	
184 851	1 JypheGly11eGlyGlyValProGlnSerValThrLeuTyrAlaGluPhe 200 	
201	1 LeuprometLysalaargalaLysCysIleLeuLeuIleGluValPheTr 217 	
217	7 palaileGlythrValPheCluValValLeuAlaValPheValMetProS 234 	
234	4 erLeuGlyTrpArgTrpLeuLeulleLeuSerAlaValProLeuLeu 250 	
251	1 PhealavalLeuCysPheTrpLeuProGluSerAlaargTyrAspValLe 267 	
267	7 userGlyAsnGlnGluLysAlaIleAlaThrLeuLysArgIleAlaThrG 284 	
28,	4 luasnGlyalaProMetProLeuGlyLysLeuIleIleSerargGlnGlu 300 	
30	1 AspargGlyLysMetargAspLeuPheThrProHisPheArgTrpThrTh 317 	
31	7 rLeuLeuLeuTrpPheIleTrpPheSerAsnAlaPheSerTyrTyrGlyL 334	

```
DS00543

        seq_documentation_block:
        LOCUS
        INV
        01-MAY-1998

        LOCUS
        AC004642
        148432 bp
        DNA
        01-MAY-1998

        DEFINITION
        Drosophila melanogaster DNA sequence
        (P1S DS00643 (D193) and DS02867 (D2000), complete sequence.

        ACCESSION
        AC004642 AC004302 AC003551 AC003552 AC003553 AC003554 AC003584 AC003556 AC00357 AC003578 AC003579 AC003579 AC003579 AC003579 AC003578 AC003578 AC003589 AC003581 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Metazoa, Arthropoda, Tracheata, Hexapoda, Insecta,
Neoptera, Endopterygota, Diptera, Brachycera,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      clones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1700
                                                                                                                                                                                                                                                                                                                                                                     1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   484
                                                                                                                                                                                                                                                                                                                             400
                                                                                                                                                                                                                                                                                                                                                                                                                 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from
                                                              Sac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster (Subclones (D193) and DSO2867 (D200)) DNA.
Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Trae
Pterygota; Neoptera; Endopterygota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq_name: gb_in:AC004642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               467
                                                                                                                                                                                                            1351
                                                                                                                                                                                                                                                        367
                                                                                                                                                                                                                                                                                               1401
                                                                                                                        1301
                                  1251
                                                                                                                                                                  351
                                                                              334
```

AUTHORS Adams, M. and Venter, J.C. TITLE Direct Submission JOURNAL Submitted (30-DEC-1999) Celera Genomics, 45 West Gude Drive, JOURNAL Submitted (30-DEC-1999) Celera Genomics, 45 West Gude Drive, Submitted (30-DEC-1999) Celera Genomics, 45 West Gude Drive, Rockville, MD, USA COMMENT This sequence was identified e-mail to flyecelera.com. * NOTE: This is a 'working draft' sequence. * This sequence will be replaced. * by the finished sequence as soon as it is available and * the accession number will be preserved. * by the finished sequence as soon as it is available and * the accession number will be preserved. * Cocanion of the control of		6 alproLysGluPhe	107285 117 107335 107385 107385 150	155
76185 GGAGAGCTTTAGATCCCTGCTCAGCCCGAGCCTGTACAGGACCACCATCC 76234 319 euLeuTrpPhe11eTrpPheSerAsnalaPheSerTyrTyrGlyLeuVal 335	386 GlyValLeuValThrLeuTrpIleIleAspArgLeuGlyArgLysLysTh 402	40 4 40 44	479 aGlnvalMetLeuGluSerSerValTyrLeuThrIceualaValTyrSerG 496 :::::::: ::::::	seq_documentation_block: LOCUS AC020509 157851 bp DNA HTG 03-JAN-2000 DEFINITION Drosophila melanogaster, *** SEQUENCING IN PROGRESS ***, in ordered pieces. ACCESSION AC020509 VERSION AC020509 HTG: HTGS_PHASE2. SOURCE Fruit fly. ORGANISM Drosophila melanogaster Enkaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota: Neoptera; Endopterygota; Diptera; Brachycera; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Reference I (bases I to 157851)

us-09-911-667a-2.rge

AGGA AGGA AGGA AGGA AGGA AGGA AGGA AGG	 ATGGACTAGGAGUTACCTCTCCACCTAAAACTTTCTTTAACCCAAAAGAG 107681	ThrieuTyralaGluPheLeuProMetLysAlaArgAlaLysCys 209 	209 ***********************************	Alloaloakolakolakolakolakolakolakolakolak	ValValLeunlaValPheValMetProSerLeuGlyfrpArgTrpLeuLe 241 	ulleLeuSeralaValProLeuLeuPheAlaValLeuCys 255 ::	255	ATTCCTCGCTCTTTCAGAAATATCCTTAATCAAATGTATCTTTAAAT 107981	pherpikeuprodiuSerAangotyrAsbyaiimusetotysii 270 :::	GlnGluiysAlalleAlaThrLeuLysArglle281 sincial[:: :::::::: sincialsAcTTTATGG 108081	A 287	TACGTC	lapro.MetProLeuGlyLysLeuIlelleSerArgGlnGluAspArgGl 303 :: :: :: :: ::	YLYSMetargaspLeuPheThrProHisPheArgTrpThrThrLeuL 319 :::: ::: ::: ::: ::: GGAGAGCTTTAGATCCTGCTGAGCCTGTACAGGACCACCATCC 108231	euLeuTrpPheIleTrpPheSerAsnAlaPheSerTyrTyrGlyLeuVal 335 	LeuLeuThrThrGluLeuPheGlnAlaGlyAspValCysGlyIleSerSe 352 :::	rArgLysLysAlaValGluAlaLysCysSerLeuAlaCysGluTyrLeuS 369 ::: ::: :: :: ::: :::	uTrpThrT GTGGATCA	GlyValLeuValThrLeuTrpIleIleAspArgLeuGlyArgLysLysTh 402 ::: ::: GGAATACTGCTGACCATCAAGGTGGTCAAGCTGTTTGCCAAGAAAAC 108448	<pre>rmetalaLeuCysPheValIlePheSerPheCysSerLeuLeuLeuPheI 419 !:::::! ::::::::::::::::::::::::::::</pre>
--	---	---	--	---	--	--	-----	--	---	--	-------	--------	--	--	--	---	--	------------------------------	---	--

Fundamental fundam seq_documentation_block: LOCUS AL. 13462 300542 bp DNA INV 04-OCT-2000 DEFINITION Drosophila melanogaster genomic scaffold 142000013386038 section 11 108497GTCGGTGGAAAGGTAGTAGTGGTGCACACTCAATTGATCATCTGA 108541 108542 TAATCAATCCAATCCTCCAATCCTAGTCGCTTCTCCACTTCCGTAAC 108591 446 alTyrThrProGluValTyrProThrAlaThrArgAlaLeuGlyLeuGly 462 479 aGlnValMetLeuGluSerSerValTyrLeuThrLeuAlaValTyrSerG 496 429 uLeuPhelleAlaArgAlaPhelleSerGlyGlyPheGlnAlaAlaTyrV 446 of 15, complete séquence. AE003462 AE002575 AE003462.1 GI:7291637 seq_name: gb_in:AE003462 108842 GTTGGC 108847 513 LysGly 514 ORGANISM REFERENCE AUTHORS ACCESSION VERSION KEYWORDS SOURCE 427

```
complement(join(29123. .29668,29729. .31300,31378. .31431))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(join(28956. .29668,29729. .31300,31378. .31553))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/db_xref="FLYBASE:FBan0004817"
/db_xref="FLYBASE:FBan0010278"
/protein_id="AAF47064.1"
/db_xref="G1:7291642"
/db_xref
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="FLYBASE:FBan0005539"
/db_xref="FLYBASE:FBan0034907"
/db_xref="FLYBASE:FBan0034907"
/protein_id="AAF47063.1"
/protein_id="AAF47063.1"
/translation="MGPAMOTYTKINSGDEEFLAWAKWIVYAFLYTFEVLADVFLSW
/translation="MGPAMOTYTKINSGDEEFLAWAKWIVYAFLYTFEVLADVFLSW
LALYMPTKLLIVVWIVLSAPAANNWIFDAILFPVLAKRQEEIDHFLHRGKEKLLIDAL
ASMTQLVAQTQISVLPFVSSFWSRSSTAPLRTSDLLQDSTGEGIGGFTSEDTDSANVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LEMRHIPAVESAEDDVDKFHQNVMSKASVISASGESIAIFREIQILTPRGRYDIKI
FSTFFQLHGKTFDXKIPMDSVLRLEHLDHKDSRQMFFVLSLDPPIKGGCTRYHYLVLL
FSAPDETTIELDFSEAELRENSYEGKLEKEISGPYYEVMGKVWLIGRKITGPGNFIG
HSGTAAVGCSFKAAAGCSTYPLERGFIYIHKPPLHIRFEEISSVNFARGGGSFREFDFE
VTLKNGTVHIFSSIEKEEYAKLFDYITQKKLHVSNMGKDKGGYRDVDFGDSDNENEFD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NDTRESIKRENPGIKUTETAKKGGEWWKELKDKSKWEDAAAKDKORYHDEMRNYKPEA
GGDSDNEKGGKSSKKRKTEPSPSKKANTSGSGPKSKEYISDDSTSSDDEKDNEPAKK
KSKPPSDGDAKKKKAKSESEPEESEEDSNASDEDEEDEASD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="MRMQLLKKASGYKPFLYNICQSDVCEYLEKRNHPFINIILSSFG
NRTNVNKCPIPPEIVLEHFRFPVKVLDMMPLPFGDYGLFTTFTFHRSELAQVKVYFTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VQNLSSGSSPVGSLEHLRDDSEELLVGVSKATTHLQAEQFQSDVSSESPR1INRRPQR
KFKNAIAIASATKLEDLHDDVEDLLAKTAMETSGQEVRQQRQPASRRRLLAQSFVKPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AYLARLKAEAREKEEDDDDGDSDEESTDEDFKPNENESDVAEEYDSNVESDSDDDSDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SGGGGDSDGAKKKKEKKSEKKEKKEKKHKEKERTKKPSKKKKDSGKPKRATTAFMLWL
                                                                                                                             /evidence-not_experimental
complement(join(26883..27038,27100..27264))
/gene="CG13561"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="CT15471"
/db_xref="FLYBASE:FBan0004817"
/db_xref="FLYBASE:FBqn0010278"
complement(<28956. .>31553)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /map="60A2-60A2"
/db_xref="FLYBASE:FBan0004817"
/db_xref="FLYBASE:FBgn0010278"
                                                                                                                                                                                                                                                                                                                       /codon_start=1
/db_xref="FLYBASE:FBan0013561"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="CT17534"
/db_xref="FLYBASE:PBan0005539"
/db_xref="FLYBASE:FBgn0034907"
<27379. >>28397
                                            /map="60A1-60A2"
/db_xref="FLYBASE:FBan0013561"
                                                                                                                     /db_xref-"FLYBASE:FBgn0034906"
                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="FLYBASE:FBgn0034906"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /map="60A1-60A2"
/db_xref="FLYBASE:FBan0005539"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="FLYBASE:FBgn0034907"
27558. .28397
                                                                                                                                                                                                                                                                           /note="CG13561 gene product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="CG5539 gene product"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                    /evidence=not_experimental
/protein_id="AAF47062.1"
/db_xref="GI:7291640"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Ssrp gene product"
        /gene="CG13561"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27379. .>28397
/gene="CG5539"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27558. .28397
/gene="CG5539"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="CG4817"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="CG5539"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="Ssrp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="Ssrp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="Ssrp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
/db_xxef="PLYBASE: FBBA00011169"
/db_xxef="PLYBASE: FBBA00011169"
/db_xxef="FLYBASE: FBBA00011169"
/protein_id="AaF47060.1"
/protein_id="G1:7291638"
/translation="MSSPLVLFTALLLVSSTICQGLPDLHKQMTPEQLQSVFHVIJTHD
AVPHYELVQLQHHENNHNRRRRSIGKGPKVNAALPPHHVKKDLSKRAYYSELKHEALA
SGGNHLEAPEYSAIKSHNYSERSIGKGPKNNAALPPHHVKKDLSKRAYYSELKHEALA
GGGNHLEAPEYSAIKSHVSSTGKGPHLISLRATQGLFKGAPHQLRMWTVGSEPNAT
HGLDLQETVHEQOLSTVSMSTQLKKIYHKRVY"
Pollard.J., Puri.V., Reese,M.G., Reinert,K., Remington,K., Saunders,R.D., Scheeler,F., Shen,H., Shue,B.C., Siden-Kiamos,I., Simpson,M., Skupski,M.P., Smith,T., Spier,E., Spradling,A.C., Stapleton,M., Strong,R., Sun,E., Svirskas,R., Tector,C., Turner,K., Venter,E., Wang,A.H., Wang,X., Wang,Z.Y., Wassarman,D.A., Weinstock,G.M., Weissenbach,J., Williams,S.M., Woodage,T., Worls,C., Wu,D., Yang,S., Yao,Q.A., Yed,J.Y., Yeh,R.F., Zhong,K., Zhong,M., Zhang,G., Zhao,Q., Zheng,L., Zheng,X.H., Zhong,R.W., Zhou,X., Zhu,S., Zhu,X., Smith,H.O., Gibbs,R.A., Myers,E.W., Rubin,G.M. and Venter,J.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
/db_xref="taxon:7227"
/dcnosome="2R"
complement(join(8417. .8923,14564. .14687,19965. .>20155))
/gene="CG11169"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="MVRFETRDGRTISVNLALLEKSLVIREMCRVGQVPEDEDFVLPL
HGTHSNVLLKILLWAEVHERHEPAWVDSKDPLPAEGIELOLISDWDKEFLRVEIDSIC
KIMEGCNYLDIPWLYKLCAQKLVFLSSREPETGFGSGYVEKIPFRQDIPFIEQIQKE"
complement (join (<26883. 27038, 27100. .>27264))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Adams, M.D., Celniker, S.E., Gibbs, R.A., Rubin, G.M. and Venter, C.J. Direct Submission
Submisted (21-MRR-2000) Celera Genomics, 45 West Gude Drive, Rockville, MD, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="CG11169"
/map="60A1-60A2"
/db_xref="ELYBASE:FBan0011169"
/db_xref="ELYBASE:FBan0034905"
/db_yref="FLYBASE:FBqn0034905"
/gene="CG11169"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product="CT32939"
/db_xref="FLYBASE:FBan0013561"
/db_xref="FLYBASE:FBgn0034906"
/db_dence=not_experimental
complement(<26883. .>27264)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="CG15800"
/product="CT15511"
/db_xref="FLYBASE:FBan0015800"
complement(<13286. >13760)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="FLYBASE:FBgn0034904"
/protein_id="AAF47061.1"
/db_xref~"GI:7291639"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="FLYBASE:FBan0015800"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="cr31208"
/db_xref="FLYBASE:PBan0011169"
/db_xref="FLYBASE:FBgn0034905"
complement(<8417. .>20155)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="FLYBASE:FBan0015800"
/db_xref="FLYBASE:FBgn0034904"
complement(13287. .13760)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="CG15800"
/note="CG15800 gene product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="CG11169 gene product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="CG15800"
/map="60A1-60A2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .300542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20196006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 dene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDILINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
```

CDS

FEATURES

194	1ThrLeuTyrAlaGluPheLeuProMetLysAlaArgAlaLysCy	509
3	Ĕ	238590
209		509
238589	TATTGATGGACGTGAGTACGTGCCACCGTGTGTAAACGTATTT	238540
210	IleLeuLeuIleGluVal.PheTrpalaIleGlyThrValPheGlu ::: :::	224 238490
225	ValLeuAlaValPheValMetProSerLeuGlyTrpArgTr 	41
238489	GGTCCTAGCACTGGTTGTGTATCCCTATTACGGATGGCGAGGTCTC	ñ
241	ulleLeuSerAlaValProLeuLeuPheAlaValLeuCys	255 238390
25		255
238389	TATTCCTCGCTCTTCAGAAATATCCTTAATCAAATGTATCTTTAA	238340
256	oGluSerAlaArgTyrAspValL GAATCGCTCGCTATTACTCTT	270 238290
271	ogluLysAlaIleAlaThrLeuLysArgIle	281
238289	::::::	238240
282		87
238239	GTGATTATACGTCTAAAAACCTACGATTGTAGATAGCTCACAACAAC	238190
287 238189	laPro.MetF 	303 238140
30	yLysMetArgAspLeuPheThrPro	19
238139	GGAGAGCTTTAGATCCCTGCTCAGCCCGAGCCTGTACAGGACCACC	
319	euLeuTrpPheIleTrpPheSerAsnAlaPheSerTyrTyrGlyLeuVal	335 238040
33	LeuLeuThrThrGluLeuPheGlnAlaGlyAspValCysGlyIleSerS ::: :::	52
238039	CTGGTCACGACCGAGCTGGTGGCCC	n i
352	rArgLysLysAlaValGluAlaLysCysSerLeuAlaCysGluTyrLeuS I	369 237973
36	erGluGluAs	385
237972	TGA	237923
386	6 GlyValLeuValThrLeuTrpllelleAspArgLeuGlyArgLysLysTh	402 237873
40.	rMetAlaLeuCysPheValllePheSerPheCysSerLeuLeuLeuLeuLeuLeuLeuLeuLeuLeuLeuLeuLeuL	419
23/8/2	refrecaeracerecectericiereacietaeres	1
41	leCysValGlyArgAsnValLeu	426
42	GICGGIOGRAPHICA TOTAL CONTROLL	29

```
/translation-"LCFVIFSFCSLLLFICVGRNVLTLLLFIARAFISGGFQAAYVYT
PEVYPTATRALGLGTCSGMARVGALITPFIAQVMLESSVYLTLAVYSGCCLLAALASC
PLPIETKGRGLQESSHREWGQEMVGRGMHGAGVTRSNSGSQE"
2064. .2069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  clone:MGH6.
Arabidopsis thaliana
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; Core eudicots; Rosidae; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Arabidopsis thaliana (strain:Columbia) DNA, clone_lib:Mitsui P1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07-MAY-1999
P1 clone: MGH6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Structural Analysis of Arabidopsis thaliana Chromosome 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    352
                                                                                                                                                                                                                                                                                                                                                                                                   438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    521
                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AB026645 81020 bp DNA PLN Arabidopsis thaliana genomic DNA, chromosome 3,
                                                                                                                                                                                                                                                                                                                                                                                                 SerCysPheLeuProlleGluThrLysGlyGlyGlyLeuGlnGluSerSe
                                                                                                                                                                                                Gaps: 0
Percent Identity: 99.306
                                                                                                                                                                                Length:
                                                                                                                                                                                                                                                                                                    to: 2104
                                                                                                  909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                        from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AB026645.1 GI:4757401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complete sequence.
                                                                                                   557 c
                                                                                                                                                                                                                                                                                                        HSM802697
                                                                                                                                                                                    734.00
5.133
99.306
                                                                                                                                                                                                                                                       alignment_block:
US-09-911-667A-2 x HSM802697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_name: gb_pl:AB026645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_documentation_block:
LOCUS AB026645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (sites)
Nakamura, K.
                                                                                                                                                                                         Quality:
                                                                                                                                                                                                                      Percent Similarity:
                                   polyA_signal
polyA_site
BASE COUNT
                                                                                                     462
                                                                                                                                                                                                         Ratio
                                                                                                                                                                                                                                                                                                         Align seg 1/1 to:
                                                                                                                                                                         alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Addition Project.

This clone (DKFZp761H039) is available at the RZPD in Herlin.
This clone (DKFZp761H039) is available at the RZPD in Herlin.
Please contact the RZPD: Ressourcentrum, Heubnerweg 6, 14059
Berlin-Charlottenburg, GERMANY: Email: clone@rzpd.de Further
information about the clone and the sequencing project is available at http://www.mips.biochem.mpg.de/proj/cDNA/.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 2104)

Blum, H., Bauersachs, S., Mewes, H.W., Weil, B. and Wiemann, S. Direct Submitssion

Submitted (15-JUN-2000) MIPS, Am Klopferspitz 18a, D-82152

Martinsried, GERMANY

Clone from S. Wiemann, Molecular Genome Analysis, German Cancer Research Center (DKF2); Email s. wiemann@dkf2-heidelberg.de; Sequenced by LMU (Ludwig Maximilians University, Munich/Germany) within the CDNA sequencing consortium of the German
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /ordinism="Homo sapiens"
/db_xref="taxon:9606"
/clone="bkF2p761H039"
/clone_lib="761 (synonym: hamy2). Vector pSport1; host
/dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HSM80<u>2</u>697 2104 bp mRNA PRI '8-JUN-2000
Homo sapiens mRNA; cDNA DKFZp761H039 (from clone LKFZp761H039).
AL359592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="similarity to SV2 related protein (Rattus
                                                                                                                                                                                                                                                                                                 237529 TCGTGGGCCTGCTGCTCTCTGCCTGTTTCTGCCCAGGGAACT 237480
                                                                         237779 TAATCAATCCAATCCTCCTCCAATCCTAGTCGCTTCTCCCACTTCCGTAAC 237730
                                                                                                                                                                237580
                                                                                                                                                                                                                                                                                                                                             496 lyCysCysLeuLeuAlaAlaLeuAlaSerCysPheLeuProIleGluThr 512
                                                                                                                                                                                                         463 ThrCysSerGlyMetAlaArgValGlyAlaLeuIleThrProPheIleAl 479
                                                                                                                                                                                                                                                                             479 aGlnValMetLeuGluSerSerValTyrLeuThrLeuAlaValTyrSerG 496
                                                                                                                                           446 altyrThrProGluValTyrProThrAlaThrArgAlaLeuGlyLeuGly 462
                                                                                                                                                                                                                               237629 GGCTGTTCCGTGCTGGCCAACTCGGCGCCATGCTGACCCTTTCGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=3
/product= hypothetical protein"
/protein_id="CAB94878.1"
/db_xref="G1:8655659"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /tissue_type="amygdala"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="DKFZp761H039"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="DKFZp761H039"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AL359592.1 GI:8655658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    norvegicus)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name: gb_pr:HSM802697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_documentation_block:
LOCUS HSM802697
DEFINITION HOMO SapienS
ACCESSION AL359592
                                                                                                                                                                                                                                                                                                                                                                                                                                                   237479 GTTGGC 237474
                                                                                                                                                                                                                                                                                                                                                                                                                     513 LysGly 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
```

ΙΙ

JOURNAL Unpublished (1999) REFERENCE 2 (bases 1 to 81020)	67716 TGTGTC
NaKaminta,7. Direct Submission Submitted (28-APR-1999) to the DDBJ/EMBL/GenBank databases.	67766 ATTCTT
Yasukazu Nakamura, Kazusa DNA Research Institute, Laboratory of Gene Structure 2; Yanan 1532-3, Kisarazu, Chiba 292-0812, Japan F-mail vnakamuakazusa or ib. Telis1438-52-3935/ex.7443).	152
Fax:81-438-52-3934) FEATURES Location/Oualifiers	67816 CCTTGA
urce	162 yrTyrG
/strain="Columbia" /strain="Columbia" /strain="Tolumbia"	67866 TAGCTG
/uz_vrer_ ca_vo>/vz_ /rbromosome="3" /rlone="McH6"	179 LeuArg
	67916 CTTCGC
NI N	195 rLeuTy
alignment scores:	67966 TTGGTA
	212 eulled ::::: 68016 TTTCT
alignment_block: ## ## ## ## ## ## ## ## ## ## ## ## ##	229
100200H	68066 TGGGTA
org 1/1 co. notecono incini i co. orozo O distributationi intellanti esta incini objetali antendi esta incini originale della segmenta incini origina della segmenta origina della segmenta incini origina della segmenta incini orig	231
9 GAAATGGCAGATGGAA 6	68116 CTAGCT
pAspThrPheMetValGluAspAlaValGluAlaIleGlyPheGlyLysP 82	233 oSerLe
67266 CACAAGATTCACGGTGGATGAGTCTTTGTGCCGATGGGATTTGGCAAGT 67315	
82 heGinTrpLysLeuSerValLeuThrGlyLeuAlaTrpMetAlaAspAla 98 	250 euPheA
Met Glimet Met I let en Ser I let en la let	267 Leuser
ATGGAGATGATGCTTCTCTTTCGTTGGACCTGCTTCTCTCTG 67415	68266
115 pArgLeuProSerTrpGlnValAlaLeuLeuThrSerValValPheValG 132	283 rGluAs
148	292 68366 CCGAGC
67466 GCATGCTCATTGGTGCTTACTCTTGGGGCATTGTTTCTGATAAACATGGC 67515	
ArgLys.Thr	
67516 CGCAGGTAGCTTTTATCATACTTGTTGTTTTGATAAGTTTCTTGGTA 67565	. 297 rAraGl
151	68466
67566 CCTCAAGTAGAAAGGGGACGGCTGAATTGTTCCGTAAATGTTCATATTCT 67615	
151	ADEAN CIC
67616 TATGAGCTCTTGAATGATGATCTCTGACCTTGTCTAATGCTGAATTTC 67665	
151 151	530 SELLYI
67666 AGACTGTTTAGCTTATGACCATCCTTTGTTCATCCGATTTCTGTGTGTCT 67715	
151 151	346 pvalCy

6//16	TGTGTCAATGGTCATCAATGCTAAAATGGACTTTGTTTTTGGGTCAT	6//9
151		151
67766	TTCTTCTGTTTATGATGCATTGTGGCTTCATTTGATTTG	67815
15		62
	CTTGAATTCCTCAGGAAAGGGTTTATCATAACTGCGGTGGTGACTTTT	۷ ا
162 67866	<pre>yrTyrGlyIleLeuSerAlaPheAlaProValTyrSerTrpIleLeuVal :: ::: TAGCTGGTTTCTTGAGCGCATTTTCACCTAACTACATGTGGTTGATCATT</pre>	178 67915
179	LeuArgGlyLeuValGlyPheGlylleGlyGlyValProGlnSerValTh	195 67965
195	rLeuTyrAlaGluPheLeuProMetLysAlaArgAlaLysCysIleLeuL :	212 68015
212	eulleGluValPheTrpAlaIleGlyThrValPheGluValValLeuAia :::::::: ::::: TTTTCTCAGCTTTCTGGACCGTTGGAACCATATTTGAGGCTTCCCTTGCT	228 68065
229	valphe.	230
99089	rcargcctttctttcttattccagtata.	68115
231	CTAGCTTTTCACATCACCATGCAATCTTTTGCAGTTAGTCATGCC	233 68165
233	oSerLeuGlyTrpArgTrpLeuLeuIleLeuSerAlaValProLeuLeuL 	250 68215
250 68216	euPheAlaValLeuCysPheTrpLeuProGluSerAlaArgTyrAspVal 	266 68265
267	LeuSerGlyAsnGlnGluLysAlaileAlaThrLeuLysArgIleAlaTh ::: :::: :::	283 68315
283	rGluasnGlyalaProMetProLeuGly	292
292		92
68366	GAGCTGGAAGAATAAAAACATTCCAACAGAAAATACTCATCTTC	68415
29	Lysteulellese	97
58416	AAGGCTGGAGAAAGTGGAGAAGCGGTTGCTGTGTCTAAGATTGTACTAAA	313
9	ACCIGATAAGGAACCAGGTTCTCATTACTAGCTCTTCTATCTCCAACGC	1 00
313	heArgTrpThrThrLeuLeuLeuTrpPhelleTrpPheSerAsnAlaPhe :: :::::: :::	329 68565
330	SerTyrTyrGlyLeuValLeuLeuThrThrGluLeuPheGlnAlaGlyAs :::	346 68615
346	pValCysGlyIleSerSerArgLysLysAlaValGluAlaLys :	360 68661

```
Arabidopsis thaliana chromosome III P1 MGH6 genomic sequence, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Arabidopsis thaliana (thale cress)
Eukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         69103 ACGGATGCCATCAGACGACGCTGTTTCTCTTTGAGGTTGTGATTCTT 69152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    69056 AAGAATTGGAGGAATCTTATGTCCACTCGTAGCC...GTTGGATTAGTTC 69102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68662 AACTACAGAGACGTTTTCATTGCCAGTTTCGCAGGTACATCAATATTT 68711
                                                                                                                                                                     68906 ATCCCATCAGICTCCATTCATAACCACCGTICTTCTTCGGCGGCGGTA 68955
                                                                                                          68712 CTGTTATCACAAGAATCCAAAGCAGTTGTTACTTGTTACAAATAAGAAA 68761
                                                                                                                                                                                                                                          403
                                                                                                                                                                                                                                                                                                                                                                                                                                              435 laPhelleSerGlyGlyPheGlnAlaAlaTyrValTyrThrProGluVal 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TyrProThrAlaThrArgAlaLeuGlyLeuGlyThrCysSerGlyMetAl 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                468 aArgValGlyAlaLeuIleThrProPheIleAlaGlnValMetLeuGluS 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       485 erSerValTyrLeuThrLeuAlaVal.....TyrSerGlyCysCysLeu 499
                                                                                                                                                                                                                                                                                              404 AlaLeuCysPheValIlePheSerPheCysSerLeuLeuLeuPhelleCy 420
                                                                                                                                                                                                                                                                                                                                                                         420 sValGlyArgAsn.....ValLeuThrLeuLeuLeuPhelleAlaArgA 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LeuAlaAlaLeuAlaSerCysPheLeuProIleGluThrLysGlyGlyGl
                                                                                                                                                  372 pTyrMetAspl.euTrp.....ThrThrLeuSerGluPheProGlyV
                                                                     .....AlaCysGluTyrLeuSerGluGluAs
                                                                                                                                                                                                                         387 alLeuValThrLeuTrpIlelleAspArgLeuGlyArgLysLysThrMet
.....CysSerLeu......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Rel. 62, Created)
(Rel. 62, Last updated, Version 1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard; DNA; PLN; 81020 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             69203 CCTGACAGATAGT 69215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         516 yLeuGlnGluSer 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: en_p1:AC024128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_documentation_block:
ID AC024128 standard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                02-MAR-2000
02-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AC024128.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AC024128;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sednence.
 361
                                                                         364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HTG.
```

1-81020

```
Lin X., Kaul S., Town C.D., Benito M., Creasy T.H., Haas B., Wu D., Maiti R., Ronning C.M., Koo H., Fujii C.Y., Utterback T.R., Barnstead M.E., Bowman C.L., White O., Nierman W.C., Fraser C.M.; "Arabidopsis thaliana chromosome III Pl MGH6 genomic sequence";
                                                                                                                                                                         ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genes were identified by a combination of three methods: Gene prediction programs including GRAIL (available by anonymous ftp from arthur.epm.orn!gov), Genefinder (Phil Green, University of from arthur.epm.orn!gov), Genefinder (Phil Green, University of Washington), Genscan (Chris Burge, http://www.cbs.dtu.dk/netpgene-Chris/GENSCANW.html), searches of the complete sequence against a peptide database and the Arabidopsis EST database at TiGR (http://www.tigr.org/tdb/at/at.html).

Annotated genes are named to indicate the level of evidence for their annotation. Genes with similarity to other proteins are named after the database hits. Genes without significant peptide similarity but with EST similarity are named as 'unknown' proteins. Cenes without significant peptide similarity but with EST similarity are named as 'unknown' proteins. Cenes without most of their length are annotated as 'hypothetical' proteins. Genes encoding tRNAs are connotated by tRNAscan-SE (Sean Eddy, http://genome.wustl.edu/eddy/tRNAscan-SE/). Simple repeats are identified by repeatmasker (Arian Smit, thtp://ftp.genome.washington.edu/RM/Repeatmasker.html).
                                                                                                                                                                       Rockville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Address all correspondence to:at@tigr.org
PI clone MGH6 is from Arabidopsis chromosome III and is near the
molecular marker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The orientation of the sequence is from SP6 to T7 end of the Pl
                                                                                                                                                          Submitted (24-FEB-2000) to the EMBL/GenBank/DDBJ databases. The Institute for Genomic Research, 9712 Medical Center Dr., 20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /chromosome="111"
/db_xref="taxon:3702"
/organism="Arabidopsis thallana"
/cultivar="Columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="SPTREMBL:Q9M7W6"
/note="unknown protein"
/gene="MGH6.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               join(426. .518,645. .1034)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /protein_id="AAF35940.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     , ., 26. .518,645.
/gene="MGH6.1"
join(4?£
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone="MGH6"
join(<426. .5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .81020
                                                                                                                                                                                                                                                                                                                    Q9LDSO.
Q9LDY9.
Q9LDZ8.
Q9LE42.
Q9LE44.
                                                                                                                                                                                                                                                                                                                                                                                               09M7W1.
                                                                                                                                                                                                                         Q9LD39.
Q9LDB0.
                                                                                                                                                                                                                                                                      Q9LDF8.
Q9LDK4.
                                                                                                                                                                                                                                                         09LDD1
                                                                                                                                                                                                                                                                                                     Q9LDM2
                                                                                                                                                                                                                                                                                                                                                                                                                                09M7W3
                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9M7W4
                                                                                                                                                                                                                                                                                                                                                                                                                                                              09M7W5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09M7W6
                                                                                                                                                                                                                      SPTREMBL, 091D39, 0
SPTREMBL, 091DBD, 0
SPTREMBL, 091DDD, 0
SPTREMBL, 091DM2, 0
SPTREMBL, 091DM2, 0
SPTREMBL, 091DW2, 0
SPTREMBL, 091DW2, 0
SPTREMBL, 091DW3, 0
SPTREMBL, 091WW3, 0
SPTREMBL, 090WW1, 0
SPTREMBL, 090WW3, 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SPTREMBL; Q9M7W6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                09M7W5;
                                                                  Unpublished.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                SPTREMBL;
                                                                                                             -81020
                                                                                                                               Lin X.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
```

us-09-911-667a-2.rge

```
/protein_id="AAF35946.1"
/protein_id="AAF35946.1"
/protein_id="MASGCVKNVGTSPSHSWTSSKMSLTRESOPLAPALENEDPVDDFE
FLLEDPVTMLSADELFSDGKLVPLKFSGYTYPEERFTTSVYHTAVKPCPRLENEISGVV
DPYLFSPRAPRCTVRWRELLGLKRLAKTQOEASSSSRLSSSSPNPKTASFRHFLNRS
SKSTAQOPSHPPPGKDSILESSSTSISSSRLSSSSSGHELDDLPRLSLDNKPG
SKSTAQOPSHPHHHHLRNONQPRKPRRHTQVDESTESSIESSKVMTVTADSPRLNASGKI
VPHGLERSSSSPGNFTGGPRMKLHHGMPRSHSANVRITPVLNVPVSSLRSGPKSGLFFG
                                                                             ESWTTGVDLGRLLTHLOLDLITTDEGLKAAVOEQRAASTTGMSSMYADSSPPYVNLKKE
KRSPEEKLEASLGPLQVQHIDLEERIETKGGAPSVEHQFMPTFSGQCSASAMPETARED
LVAGFTNGSCOGDLCVGLRLGDBCAKRRTTQVTNERMRPAE"
complement (26470. .26521)
/rpt_family="(GA)n"
<26932. .>27192
                                                                                                                                                                                                                                                                                                                        /protein_id="AAF35945.1"
/translation="MAKNKDDIKYATAQAKLSEDEAIRVSYKHGTPLEGGKIAESEPVE
LFSSAQRIEKGKEQSAASGDQTQ1QRDIKDIKGTRTDDSPR"
complement(<31715. .>32860)
                                        VYTSVKGGVGE LOEVKA LELQSPVGSLVGKQVVKVGRSSGLTTGTVLAYALEYNDERGV
CFLTDFLVVGENHRSPFDLEGDSGSLJVMKGEEKARP LGTIWGGTGSRGRLKLKVGECP
(VDHLQGSDPF1GSGSQVASQETCGTLGAIVRSQTGGRQVGFVTNRHVAVNL)DYPSQKM
                       *HPLPPALGPGVYLGAVERATSFITDDLWFGIFAGTNPETFVRADGAFIPFADDYDLSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GluLeuAspAspGlyAlaAlaValProLysGluPheAlaAsnProThrAs 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCAAATTTACGTCCTTGCTTACGCTGGAATGGGTTGGGTTGCAGAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pArgLeuProSerTrpGlnValAlaLeuLeuThrSerValValPheValG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67516 CGCAGGTAGCTTTTATCATACTTGTTGTTTGATATAAGTTTCTTGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .....AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     82 heGinTrpLysLeuSerValLeuThrGlyLeuAlaTrpMetAlaAspAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          132 lyMetMetSerSerSerThrLeuTrpGlyAsnIleSerAspGlnTyrGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pAspThrPheMetValGluAspAlaValGluAlaIleGlyPheGlyLysP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             672
16
.423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Identity: 28
                                                                                                                                                                                                                                                                                                /note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to: 81020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="SPTREMBL:Q9LD39"
                                                                                                                                                                                                                                                                          /db_xref="SPTREMBL:09LE44"
                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(31715. .32860)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="unknown protein"/gene="MGH6.8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arglys.Thr........
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="MGH6.8"
                                                                                                                                                                                                                                                       /codon_start-
                                                                                                                                                                                                            /gene="MGH6.7
                                                                                                                                                                                                                                                                                                                 /gene="MGH6.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         to: AC024128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        52.381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_block:
US-09-911-667A-2 x AC024128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  723.50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ||||::: |||||||
67249 GAAATGGCAGATGGG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            149
                                                                                                                                                                                               mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 115
                                                                                                                                                                                                                                                                                                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67316
                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
            19090,19255. .19381,19476. .19614,19697. .19785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .19090,19255. .19381,19476. .19614,19697. .19785,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ESYERRGLTPPEPSNSMEFPPAGLPDIFALLGKAARVVLDAIGFYLMLRSCPFTEILD
NVPLRNCEVSSSVLSVCCYARPSFHGAQHHSLTEDEQLILYSDHDHQLDKSLISFYKSD
KAGLHTRDHHGQMILVVDVDLGPQRAVYPGLALYQATGYYSPAVHRTDLNSLOGSIEG
RFSLAFKLMPKSMTNLSCSEMRAGHGVAQFQLPVSVDDFWQRSHSNDELFNRQTLQS
FIVPQSQDGSMKQLKREKSDSRCKPLPPEKRLRLEAQRVLKERVQETABFKGTLKRE
NLKECENNHNVMNSPCANIRREIGWPHGVPFVHPHDLPNKAKIGFLETYEPGWSETHDM
EFSLSETAQGNOHVTNCNHSSPNNTPFPRAET"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="MPOYGSTGGHCEFTAASYFSWPTSSRLSNAAEERANYFSNLQKEE
DDDDEVSPEPVSTEPKGQRATTLLELMTIRAFHSKMLRCYSLGTAIGFRIRRGVLTDIP
AIIVFVSRKVHKQWLSPLQCLPTALEGAGGIWCDVDVVEFSYFGEPDHQPTPKQTFTTD
                                                                                                                                                                                                                                                                                                                                               ALRSNLQQVLAAVERNRWEEPPTVADDAQSCCGSNDEGDSEEHRWKLAGEAQDTKKMCR
VGMSMCRSCGKGEASVLLLPCRHMCLCSVCGSSLNTCPICKSPKTASLHVNLSS"
complement(13950. .14024)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /translation="MASSTGLTVAGALLAGDFRLPAVSSLIPKRTSSSLSGLSRRDISS
PROGWALSEGKILITSLSNSFRFAVGREABGGFLENVSEDPDEMDDLFRYGKVVFRS
TDVKSPTARYDDDASSLAFNELAKVASDVKAGDIKUFVKPLVYWTRFFIIATREST
TDVKSPTARYDDAASSLAFNELAKVASDVKAGDIKUFVKPLVYWTRFFIIATREST
OIDAIGSRWRDLAEKKYGKVANGDVKPNSWTLLDFGDVVIHLFLPPQRTFYNLEDFYGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /protein_id="AAF35943.1"
/translation="MMAGNGMPTLGRVKVCDLVPSEGLPSDSYKLAVTTLSQSLAQYSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AIIQFPASDGALLRSGLDSARLYFHQRDSYPATNNMIHTNDSQEWCKTSGYYADPQSWQ
               /tradslation="mmHEFRLPTANDTIPGGPTHSNPTPTSLLHAEVWTLCRIFKRTVS
SRKYTPDWRELANGKRVKQQQSNYQEAYINFGDNESSSSTNVMNVREGKGNYERSVFQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  join(complement(21254. .22367),complement(<20664. .21091))
/gene="MGH6.5"</pre>
                                                                                                   , a non-autonomous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .24731),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        join(complement(24815. .25204), complement(24582. .24731), complement(24256. .24496), complement(23677. .24177), complement(23184. .23578))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   join(complement(21254. .22298), complement(20664. .21091))
                                                   QQTPYQHQNQP1LMDTTHVDSFQHFSNDNIHHETYETWPDELRSVVEFAFPPSFLS"
                                                                                                                                                           /rpt_family="(GAA)n"
//pt_family="(GAA)n"
join(complement(13663. .>13709),complement(13169. .13565)
complement(<12513. .13076))
                                                                                                                                                                                                                                        join(complement(13663, 13709),complement(13169, 13565),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement(24815. .>25204), complement(24'82. .2 complement(24256. .24465), complement(23677. .24177), complement(23677. .24177), /gene="MGH6.6"
                                                                           complement(2496. 2802)
/note="ATTIR16T3A|ATTIR16T3A ATTIR16T3A
                                                                                                                    DNA transposon - a consensus." complement(3046. 3122)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="hypothetical protein"
/gene="MGH6.4"
                                                                                                                                                                                                                                                                                                         /db_xref="SPTREMBL:Q9LDD1"
/note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="SPTREMBL:Q9LDY9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="SPTREMBL:09M7W5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         db_xref="SPTREMBL:Q9LDF8"
                                                                                                                                                                                                                                                                  complement(12513. .13076))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /protein_id="AAF35944.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /protein_id="AAF35942.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="unknown protein"/gene="MGH6.6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="unknown protein"
/gene="MGH6.5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(13950. .1402
/rpt_family="(TAAAA)n"
hoin(<18851. .19090.192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AMQIELPFEDQSQPRN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19881. .20002)
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19881. .>20002)
/gene="MGH6.4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
                                                                                                                                                                                                                           /gene="MGH6.3"
                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            oin(<1885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    oin(18851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                      repeat_region
                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                                                                                                                                      mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                   CDS
```

99529	CCTCAAGTAGAAAGGGGACGCTGAATTGTTCCGTAAATGTTCATATTCT	67615
151		153
16	ATGAGCTCTTGAATTGAATGATCTCTGACCTTGTCTAATGC	67665
151		151
9	GACTGTTTAGCTTATGACCATCCTTTGTTCATCCGATTTCTG	67715
151		151
67716	TGTCAATGG	67765
151		151
99229	TTCTTCTGTTTATGATGC	67815
15	GlyLeuLysIleSerValLeuTrpThrLeuT 	162
67816	CCTTGAATTCCTCAGGAAAGGGTTTATCATAACTGCGGTGGTGGTTTTC	,
162 67866	<pre>yrTyfGlyIleLeuSeFratanfeAtartovally Set.ityllillillillillillillillillillillillilli</pre>	1,3 67915
1	LeuArgG yLeuValG yPheG ylleG yG yValProG nSerValTh ::: ::	195 67965
67916	CTTCGCTCTTGGTTGGGTTGGGGAGGAGGAGGTCCTGTTGCTTC	, ,
195	rLeuTyrAlaGluPheLeuPrOMetLysAlaAfalaLysCyslreueubeubeubeubeubeubeubeubeubeubeubeubeu	68015
•		α
212	euileGluValPhefrpAlaileGlyInrvalPhebluvalvalbeund 	68065
,		230
, 9	TGG	
23		233
68116	CTA	68165
233		250
68166		68215
250	euPheAlaValLeuCysPheTrpLeuProGluSerAlaArgTyrAspVal 	266 . 68265
٠		1 283
9		
283		292
68316	::: ::: GATGAACAAAACCAACTACCTCCGGGTGTTCTCAGT	, 68365
292		292
68366	CCGAGCTGGAAGAGAATAA	68415
293	3	297
68416	6 AAGGCTGGAGAAGTGGAGAAGCGGTTGCTGTGTTGTAGATTGTACTAA	A 68465
297	7 rargGlnGluAspargGlyLysMetArgAspLeuPheThrProHisP	9 313

...

789	466 AG	CTGATAAGGAACCAGGTTTCTCATTACTAGCTCTTCTATCTCCAACGC 00313	
	13	heArgTrpThrThrLeuLeuTrpPheIleTrpPheSerAsnAlaPhe 329	
89	:: 516 TA	68	
	30	ScriyrTyrGlyLeuValLeuThrThrGluLeuPheGlnAlaGlyAs 346 ::::	
89	99	360	
89	346 pV	pValCysGlyIlebersetArglyBuysArgvaraudududuz 	
	61		
9	662	::::: AACTACAGAGACGTTTTCATTGCCAGTTCGCAGGTACATCAATATTT 68711	
	364	372	
89	712	9	
	372	PTYFMetAspleuLeuTrpThrThrLeuSerGluPheProGlyV 387 This:	
89	762	403	
99	387	00	
	404	420	
89	862	ATCAATGTTGATGTTGCATTTTGCTTCTCCCTCTGTT 68905	
	420 s	SVaiGlyArgAsnValLeuThrLeuLeuDeuPhelleAlaArgA 435	
89	906	68	
	435 1	_	
99	8956 T	69	
ý	452 T	TyrProThralaThrargAlaLeuGlyLeuGlyThrCysSerGlyMetAl 468 ::: ::: ::: ::: TATCCAACGCCAGTGACAACCGGGGTAGGAGTAGGAGGACTCGGTAGG 69055	
	468	rgvalGlyAlaLeulleThrProPhelleAlaGlnValMetLeuGluS 485	
9	56	: i::: i::::::::: i::::	
	485 e	SerValTyrLeuThrLeuAlaValTyrSerGlyCysCysLeu 499	
9	9103 A		
v	500 L : 9153 G	LeualaalaLeualaSerCysPheLeuProIleGluThrLysGlyGlyGl 516 ::::::::: :::: :::	
	516 у	yLeuGlnGluSer 520	
9	9203 C	CCTGACAGATAGT 69215	
-bəs	_name:	gb_ba:AE001863	
sed_ rocu DEFI	sed_documen: LOCUS DEFINITION	Lation_block: AE001863 19867 Deinococcus radiochromosome 2.	
ACCE VERS	ACCESSION VERSION KEYMORDS	AE001863 AE001825 AE001863.1 GI:6460670	
SOUR	SOURCE ORGANISM	Deinococcus radiodurans. Deinococcus radiodurans	

REFERENCE AUTHORS

AUTHORS

TITLE

```
/codon_start=1
/transl_table=11
/transl_table=11
/product="peptide ABC transporter, permease protein"
/product="peptide ABC transporter, permease protein"
/protein_id="AAP12420.1"
/db_xref="G1:6460715"
/db_xref="G1:6460715"
/translation="MLCCHMLNYTLRRILGMIPTLLVISVLCFLVIKLOPGSFIDOYL
/translation="MLCCHMLNYTLRRILGMIPTLLVISVLCFLVIKLOPGSFIDOYL
GWTYP:DAALTLALTWLIAVPLGIYPARNYTLDFOYTRALFGYSFASCAPVTSIIGERL
EDPRESEXETVANTTROMICLOPAWROYLNWITGVYTRANFGYTGATLLISTYNSILDYCSTOWTGITTROMICLYGGLATPORIAASTLLUS
LDVLSODYIRTARAKGLIGGRAY UKHHAYRNAINPLISLAGLSLPTLISGTIIISIVMS
LDVLSODYIRTARAKGLIGGRAY UKHHAYRNAINPLISLAGLSLPTLISGTIIISIVMS
LDTIPPLLYDSLLNKDOYTAMTLLMLSAFLLLIGNLLSDLALAWADPRVRYS"
complement(5964...7804)
/gene="DRA0210"
/note="This region contains an authentic frame shift and is not the result of a sequencing artifact; similar Lo
GB:AEGOO657 percent identify: 51.19; identified by
sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="wmsnnkypselvrkwygcavsspaplppeppawwaldpadaap
ayvolaoglrrriesgelsactalpaerelaarigvskytlkogigileaegllkrrr
gsgyfyvaqtephyspogolybgavlsfygorppgelsigilya
egyvrikrlætsbopplavebstlpaaligplyapdyybasiygilogrhlaparair
Hlraonasaelahligvplgaalltfervswlasgrpveyaracyrgdrybfydb
                                                                                                                                                                                                                                                                                                                                                               /translation="WIGGEETRTPLQMAWRRYRKSRPGVIAGWVLIALYVIALLSPFL
APYNITTOHEGYEYORPQTVHLIHQGRLHRPFVYGSTTKRDPVTFAKKTVPDTAHPLP
VQFFVKGEPYSFLGLQSDRHLFGVPDGQDBYGEKVPRYFFLFGTDGLGRDLFSRTLVG
VQFFVKGEPYSFLGLQSDRHLFGVPDGQDBYGEKVPRYFFLFGTDGLGRDLFSRTLVG
LIPARWPSTWVYTGIVALLIGMASLARVYRGVLARRNLDYVSAQAMGASNLRVI
LIPARWPSTWYTGIVALLIGMASLARVYRGVLARRNLDYVSAQAMGASNLRVI
LRHITPPNLSSFLLYFTLALDGYILGESTLSFLGIGIKEPWTSWGLLLRDASKLEVVS
SYPWILMPGLFVFISVLAFNEMGDALRDADTQSR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="similar to GB:U00096 SP:P76535 PID:1788768 percent identity: 63.89; identified by sequence similarity; putative" /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8603. .9806
/gene="DRA0212"
/note="This region contains an authentic frame shift and is not the result of a sequencing artifact; similar to GB:L42023 SP:P44861 PID:1005712 PID:1220844 PID:1205001 percent identity; 56.04; identified by sequence similarity; putative"
/gene="DRA0213"
9857. .10774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="similar to GB:AL009126 percent identity: 60.78; identified by sequence similarity; putative"
                                                                                                                                                                               /codon_start=1
/transl_table=11
/product="peptide ABC transporter, permease protein"
/protein_id="AARF12421.1"
/db_xref="G1:6460716"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="similar to PID:1001492 PID:1001545 percent adentity; 62.93; identified by sequence similarity; numerius"
                                                                                 identity; 66.97; identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product="transcriptional regulator, GntR family"
/protein_id="AAF12419.1"
/db_xref="G1:6460714"
                                                                     to PID:1001216 PID:1001269 percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="DRA0209"
complement(4857..5843)
/gene="DRA0209"
complement(3751. .4860)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7764. .8603
/gene="DRA0211"
7764. .8603
/gene="DRA0211"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9857. .10774
/gene="DRA0213"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             putative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E. 200308969677)
E. 2 (bases I to 198677)
E. 3 (bases I to 198677)
E. 4 (bases I to 198677)
E. 5 (bases I to 198677)
E. 5 (bases I to 198677)
E. 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product="conserved hypothetical protein"
/product="conserved hypothetical protein"
/protein id="aAF1242.1"
/db_xref="cl:c4660717"
/translation="MNFEVLSPSRLSSVAHALNRASLKEEMMSKSRSLSALLLGALLL
/translation="MNFEVLSPSRLSSVAHALNRASLKEEMMSKSRSLSALLLGALLL
/translation="MNFEVLSPSRLSSVAHALNRASLKEEMMSKSRSLSALLLGALLL
/translation="MNFEVLSPSRLSSVAHALNRASLEVAHARDTAPRASANVLDATARRANNSVTPPKSAEMAFNTHGPNAAGRONWLTVKADGTVKAGADWVLDPGHPDAAAX
TTAALWNSVTPPKSAEMAFNTHGPNAAGRONWLTVKADGTVKAGADWVLDPGHPDAAAX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IRNNYVSVAKNYAUGIIMEDRAVRYEDYNPVGGEPVOMOYNETALARYRAETGATGTPDP
ADPOWSAWRROOVTNLVRETALAVKAVKPGVAIAAATITYGEGPADEAAFAASRPYAE
VGGDWLTWYKSGYLDONVMNNKRDEPPLOAGMWEDONNTFAAGLRORYPHEGVSGAA
IYLDDIASTVSGIRKTQAAGLGWAGYSYRTPDKDVNBGKRGAAEVLADLKLRLTDAGG
PPPTFVKHAPLPAASVGLGSGELRAARPGHHSVELVRAGGTWNDVVAATFSDQGGRYG
FLNLPQGAFDVRVDGKILLPNVQATPGRVTMLEPITLN"
                                                             (bases 1 to 198677)
Milte, D., Elsen, J.A., Heidelberg, J.F., Hickey, E.K., Peterson, J.D., Dodson, R.J., Haft, D.H., Gwinn, M.L., Nelson, W.C., Richardson, D.L., Moffat, K.S., Qin, H., Jiang, L., Pamphile, W., Crosby, M., Shen, M., Wanathewan, J.J., Lam, P., McDonald, L., Utterback, T., Zalewski, C., Makarcoa, K.S., Aravind, L., Daly, M.J., Fraser, C.M. et. al. Genome sequence of the radioresistant bacterium Deinococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="similar to PID:1653945 percent identity: 49.28; identified by sequence similarity; putative" /codon_start=1 /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="similar to GB:AE000520 percent identity: 43.92; /identified by sequence similarity; putative" /codon_start=1 /transl_table=11
                    Thermus/Deinococcus group; Deinococcales; Deinococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="oligoendopeptidase F, putative"
/protein_id="AAF12423.1"
/db_xref="G1:6460718"
                                                                                                                                                                                                                                                                                                                                          radiodurans R1
Science 286 (5444), 1571-1577 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement(2005. .3645)
/gene="DRA0207"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(3751. .4860)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="DRA0206"
/note="e:c."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(91, .1926)
/gene="DRA0206"
complement(91, .1926)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="DRA0207"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="DRA0208"
                                                                                                                                                                                                                                                                                                                                                                                                                    20036896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
MEDLINE
REFERENCE
```

gene

FEATURES

CDS

CDS

```
358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  77985
                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
/product="trp repressor binding protein WrbA, pulative"
/product="trp repressor binding protein WrbA, pulative"
/protein_id="AAF12417.11"
/db_xref="G1:646712"
/translation="WYAPVKLAIVEYSSTGTGYAWAQEAAEAGRAAGAEVRLLKVRET
/translation="WYAPVKLAIVEYSSTGTGYAWAQEAAEAGRAAGAEVRLLKVRET
GGLWSSGKLANKTESMTSAONVNGGOETTLCALYWYAMHWGAVLTPPGYTDEVIFKS
GGNPYGASVTANGQPLLENDRASIRHQVRRQVELTAKLLG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="wgggglhprolghldrlsdelmrgfwlnprevaaflkgagi.naag
LTGwgwgtphpalgdpaafaaillsdnroarlgdlgyrlyvahhlTcLTlgapilldpnd
                                                                      /note="similar to GB:M99166 SP:P30849 PID:148264 GB:UU0096 PID:1651499 percent identity: 54.36; identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="similar to GB:U00096 PID:1788770 PID:1799860 PID:1799864 percent identity: 54.32; identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120 TrpGlnValAla.....LeuLeuThrSerValValPheValGlyMetMe 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              86 uSerValLeuThrGlyLeuAlaTrpMetAlaAspAlaMetGluMetMetI 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   70 ValGluAspAlaValGluAlaIleGlyPheGlyLysPheGlnTrpLysLe 86
/transl_table=11
product=conserved hypothetical protein"
/protein_id="AAF12418.1"
/db_xref="G1:6460713"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="identified by Glimmer2; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       77115 GIGGACCGCGIGCIGGACGACCIGGCCTGGGCCGCTICCAGIGGAAGCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               103 leLeuSerIleLeuAlaProGlnLeuHisCysGluTrpArgLeuProSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Identity: 30.603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="hypothetical protein"
/protein_id="AAF12499.1"
/db_xref="GI:6460794"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TERVWORIEATRPPLFVDEVMAGREDEGA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to: 198677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
                                                                                                                                                                                                                                               complement(10796. .11398)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11664. .12059
/gene="DRA0215"
11664. .12059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="DRA0216"
12068. .13069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="DRA0216"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="DRA0215"
                                                                                                                                                                                                                              /gene="DRA0214"
                                                                                                                                                                                                                                                                   /gene="DRA0214"
                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       644.50
2.170
64.009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Align seg 1/1 to: AE001863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alignment_block:
US-09-911-667A-2 x AE001863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        dene
                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                    CDS
```

```
.....TACCG 77989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       78040 CTTACCTGGTGGAAAAGATTGGGCGGGCGGGTCACGTTGGTCGCCTTTCTG 78089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             78090 ACGCTCGCCGCGCGCGCGCTACCTGTTCCTGCTCGCCCACGACGCGAA 78139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11865 CTCGCCCGCCGCCGCTGCTGATGTGACGTGACGTTGGGCTGAGCT 77914
                                                                                                                                                                                                                                                                                                                                                                                                                                77815 ACCCGGAGCAGCCGCCGCGCGTGTCGCCCCAGCTTTTCCGGGGCGTC 77864
                                                                                                                                                                                      7365 GCGTGTTTCTGACGACGGTGCCTCGCCGTGGTCTTCGGGCTGCCGGGG 77414
                                                                                                                                                                                                                                                                                                                                                  77315 GTTCGGGGCGTGGTTCTGGGGGTATCTGGCCGACCGGCTGGGCCGGCGCA 77364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         329 eSerTyrTyrGlyLeuVal.....LeuLeuThrThrGluL 341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            374 tAspLeuLeuTrpThrThrLeuSerGluPheProGlyValLeuValThrL 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        424 nValLeuThrLeuLeuLeuPheIleAlaArgAlaPheIleSerGlyGlyP 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       246
134 tSerSerThrLeuTrpGlyAsnIleSerAspGlnTyrGlyArgLysT 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GlualaLysCysSerLeuAlaCysGluTyrLeuSerGluGluAspTyrMe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     77990 CAGCACGCTGCTCGCGCTCGCGCAGGTGCCGGGGTATCTGCTCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              euTrpllelleAspArgLeuGlyArgLysLysThrMetAlaLeuCysPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     296 leserArgGlnGluAspArgGlyLysMetArgAspLeuPheThrProHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        341 euPheGlnAlaGlyAspValCysGlyIleSerSerArgLysLysAlaVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   77965 GGCTGGACCTCGGCGCGTG......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               408 ValilePheSerPheCysSerLeuLeuLeuPheIleCysValGlyArgAs
                                                                                                                                                                                                                                           313 PheArgTrpThrThrLeuLeuLeuTrpPheIleTrpPheSerAsnAlaPh
                                                                                                                                                                                                                                                                   200 heLeuProMetLysAlaArgAlaLysCysIleLeuLeuIleGluValPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  246 alproLeuLeuLeuPheAlaValLeuCysPheTrpLeuProGluSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      263 ArgTyrAspValLeuSerGlyAsnGlnGluLysAlaIleAlaThrLeuLy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 279 sargllealaThrGluAsnGlyAlaProMetProLeuGlyLysLeullel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           151 hrGlyLeuLysIleSerValLeuTrpThrLeuTyrTyrGlyIleLeuSer
                                                                                                                                                              168 AlaPheAlaProValTyrSerTrpIleLeuValLeuArgGlyLeuValGl
                                                                                                                                                                                                                                                                                                                                                                                                          217 TrpAlaIleGlyThrValPheGluValValLeuAlaValPheVal.....
```

```
/COGOD_STATE_1
/COGOD
                                                                                                                                                                                                                                                                                                                  // gene="zk637.1"
join(complement(z11115.1:1418...1509),
complement(z1115.1:1184...1509),
complement(z1115.1:1184...1374),
complement(z1115.1:660...746),
complement(z11115.1:660...746),
complement(z11115.1:486...427), complement(19292...19791),
complement(z11115.1:38...427), complement(19292...19791),
complement(z1116.1:238...427), complement(18703...18876))
                                                                 /chromosome="III"
/clone="K01F9"
/clone="K01F9"
/clone="K01F9"
/clone="K01F9"
/clone="K01F9"
/clone="K01F9"
/clone="K01F9"
/clone="K01F9"
/complement(Z1115.1:787 . 870),
/complement(Z1115.1:560 . 746),
/complement(Z1115.1:486 . 610),
/complement(Z1115.1:238 . 427), complement(19292 . 19791),
/complement(19027 . 19177), complement(18703 . 18876))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="predicted using Genefinder contains similarity to Pfam domain: PF00083 (Sugar (and contains similarity to Pfam domain: PF00083 (Sugar (and cother) ransporter), Score=321.5, E-value=3.1e-93, N-1, Score=1.3, E-value=3.2, N-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDNA EST yk31198.3 comes from this gene
CDNA EST yk31198.5 comes from this gene"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           273 salailealaThrleuLysArgilealaThrGluAsnGlyAlaProMetP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              290 roLeuGlyLysLeuIleIleSerArgGln.....GluAspArgGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     304 LysMetArgAspLeuPheThrProHisPheArgTrpThrThrLeuLeuLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       257 TrpLeuProGluSerAlaArgTyrAspValLeuSerGlyAsnGlnGluLy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Align seg 1/1 to reverse of: CEK01F9 from: 1 to: 19834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length: 344
Gaps: 6
Percent Identity: 40.407
'organism="Caenorhabditis elegans"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6053 t
                         /db_xref="taxon:6239"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3638 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_block:
US-09-911-667A-2 x CEK01F9/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3410 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       640.50
3.036
61.337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . . . . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission

Laborated (OG-ARR-1993) Nematode Sequencing Project, Sanger Centre, Submitted (OG-ARR-1993) Nematode Sequencing Project, Sanger Centre, Hintton, Cambridge CB10 1RQ, England and Department of Genetics, Haston University, St. Louis, MO 63110, USA. E-mall: pss@sanger.ac.uk or rw@nematode.watl.edu
jes@sanger.ac.uk or rw@nematode.watl.edu
coding sequences below are predicted from computer analysis, using predictions from Genefinder (P. Green, U. Washington), and other available information.

Current sequence finishing criteria for the C. elegans genome sequencing consortium are that all bases are either sequenced unambiguously on both Strands, or on a single strand with both a dye primer and dye terminator reaction, from distinct subclones.

Exceptions are indicated by an explicit note.

IMPORTANT: This sequence is not the entire insert of clone KOIF9. It may be shorter because we only sequence overlapping sections once, or longer because we arrange for a small overlap between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The end of this sequence (19655. .19834) overlaps with the start of sequence 211115. For a graphical representation of this sequence and its analysis see:- http://wormbase.sanger.ac.uk/perl/ace/elegans/seq/sequence?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            once, or longer because we arrange for a small overlap between neighbouring submissions.
The start of this sequence (1. .200) overlaps with the end of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-0C1-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genome sequence of the nematode C. elegans: a platform for investigating biology. The C. elegans Sequencing Consortium Science 282 (5396), 2012-2018 (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The C.elegans Sequencing Consortium.

Erratum: [[published errata appear in Science 1999 Jan 1,283(5398):35 and 1999 Mar 26;283(5410):2103 and 1999 Scp 3;285(5433):1493]]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Caenorhabditis elegans.
Caenorhabditis elegans.
Eukaryota: Metazoa: Nematoda; Chromadorea; Rhabditida;
Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sedneuce
                                                                                                                                                                                                                                                                                                                                                                                                                                                            474 eThrProPhelleAlaGlnValMetLeuGluSerSerValTyrLeuThrL 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                491 euAlaValTyrSerGlyCysCysLeuLeuAlaAlaLeuAlaSerCysPhe 507
                                    458 AlaLeuGlyLeuGlyThrCysSerGlyMetAlaArgValGlyAlaLeuIl
                                                                                                                                   441 heGlnAlaAlaTyrValTyrThrProGluValTyrProThrAlaThrArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Caenorhabditis elegans cosmid K01F9, comp. 'e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11:0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   508 LeuProlleGluThrLysGlyGlyGlyLeuGlnGluSerSer 521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
1. .19834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 19834)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 19834)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19834 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Z22175.1 GI:297971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequence U00026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_name: gb_in:CEK01F9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          name=K01F9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craxton, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CEK01F9
```

DEFINITION

ACCESSION VERSION KEYWORDS

ORGANISM

SOURCE

REFERENCE AUTHORS TITLE

MEDLINE REMARK

JOURNAL

TITLE JOURNAL

COMMENT

REFERENCE AUTHORS 303

source

FEATURES

VERSION AL44: KEYWORDS HTG: SOURCE OFYZZ ORGANISM OFYZZ ORGANISM OFYZZ SPETI	TITLE OFFICE OFF		9384 This * Th * Th * Th * Ly * Ly FEATURES * Ll	 BASE COUNT 3 ORIGIN alignment_score Percent Simila	alignment_block US-09-911-667A	67 Thrphe 611:::	83 nTrpLy 68503 AATATT 100 luMetM 	117 Leupro
19591 ATGGTGCATTTGGGCTATTACCGCATTCTCGTACTACGGTATGGTTCTCT 19542 337 eurhrThrGluLeuPheGlnAlaGlyAspValCysGlyTleSer 351 ::		CTGGATTGATAATCACTGTATTGATAATTGAATGGATGGTTTGGAAGAAGAAGAAG	424			480GlnValMetLeuGluSerSerVa 	487 lTyrLeuThrLeuAlaValTyrSerGlyCysCysLeuLeuAlaAlaLeuA 504 :	<pre>seq_name: gb_htg:H0702G05 Locds</pre>

```
A (Day of St. 1 to 194027)

Logos 1 to 194027)

Logos 2 to 194027)

Logos 3 to 194027)

Logos 3 to 194027)

Logos 3 to 194027)

Logos 4 to 194027)

Logos 5 to 194027)

Logos 6 to 194027)

Logos 7 to 194027)

Logos 6 to 194027)

Logos 6 to 194027)

Logos 7 to 194027

Logos 194021

Logos 194027

L
                                                                                                  iaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; raryota; Viridiplantae; Liliopsida; Poales; Poaceae; hartoideae; Oryzeae; Oryza. (bases 1 to 134092)
                                                                                                                                                                                                                                 n,B., Feng,Q., Huang,Y.C., Chen,Z.H., Zhou,B., Li,Y., Zhu,J.J., Mng,Y.S., Zhao,Q., Liu,Y.L., Mu,J., Yu,Z., Fan,D.L., Chen,L., ng,Q.J., Zhang,L., Lu,Y.Q., Yu,S.L., Zhu,J., Liu,X.H., Hu,X., i,H.Y., Zhang,L., Lu,Y.Q., Yu,S.L., Zhu,J., Chen,X.C., Zhang,Y.J., Wang,R., Li,C., Lu,Y., Chen,X.C., Zhang,Y., H., Jia,P.X., Li,T., Qian,Y.M., Ying,K. and Hong,G.F. yza sativa indica (Guangluai4) genomic DNA, chromosome 4, BAC published
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGATTCTTTCATATGCCGGGGTCGGCTTGATTGCAGAAGCAATGG 68552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OSETTrpGlnValAlaLeuLeuThrSerValValPheValGlyMe 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MetileLeuSerileLeuAlaProGlnLeuHisCysGluTrpArg 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ysLeuSerValLeuThrGlyLeuAlaTrpMetAlaAspAlaMetG 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            erSerSerThrLeuTrpGlyAsnIleSerAspGlnTyrGlyArg. 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length: 897
Gaps: 20
Percent Identity: 21.182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          to: H0702G05 from: 1 to: 134092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a 29132 c 29156 g 38515 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone_lib="BAC-HindIII"
/clone="H0702G05"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 134092)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /map="C810"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          572.00
1.658
38.462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A-2 x H0702G05
; HTGS_PHASE2
                                              /za sativa.
/za sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            res:
Jality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                arity:
```

68653 (GCTAATAGGAGCTTACACTTGGGGTGTAGTTTCAGACAACTACGGAAGGA	68702
149		149
68703	GGCAGGTCCATCGTTTACTCCAATCACTGATTTTGTTTTCTAGCACACAT	68752
149		149
68753	TAIGCATAATAATTTGATCTCTTGGTGATGCTTATTGCTTTAGCTTAGCA	68802
149		149
68803	ATGGGTCACAAAAGATGGTCTGTGAACTTGTTTCCATGCACAGGTTGTTC	68852
149		149
68853	CAGTTGATAGTTTTAGCCATAGTTATTAAGACCGGACCG	68902
149		149
68903	GGACCGGGAAAAACCAGAACTGGAGCCTCTGCCGGTTCGGTCCAGTTAAA	68952
149		149
68953	AGACCGGATATGCAATCAAGCCGGTATAAACCGGTTAGGCTGTCCGGTTT	69002
150		155
69003	TCATGAAAAACGGCTATAGAACCGGGGAGAAAAACCATGGTTGAACCGGCC	69052
155		155
69053	TTGCGAGGGAGTGGTGCATGCAAGGGAGCAGTCGGGGGAAAATGAGGGA	69102
155		155
69103	AAAAGAGCCCTCACCAACCACCAGGCTATCATCCTTGTTGTTTGAAAG	69152
155		155
69153	GAATGAGTAATATTTAATAACTATTGAACCGGGTTAGACAAATGGTTC	69202
155		155
69203	AACCGGTTGAACCAGGAACCATCGAACCAAGAGCCTCACCGGTTCAATT	69252
155		155
69253	ACCGGTCCAGTCTCAATAACTATGGTTTTAGCTAGTAACTAAC	69302
155		155
69303	AAAGGTCTTAGATAATTGATCAGTTAGACATTTCTATGTTACTTTCAGAA	69352
156	Ser. ValLeuT	159
69353	ATATCCTTGAAACCATCCCTCAAATTTATGTTCCTGAAATCATATTTT	69402
159		i
69403	GGTGATGCTTATTTCATGATATTGCAAACACTACCTTGATATATTCCTCT	69452
163		163
69453	TGGTGTGCAGCACACAGGCTCATACATTCTGTTGCAFTTGTAATTTACAG	69502
164	GAGAGGATTTCTTTTACCGCCATCGTGACTAGTGGAGCTGGHTTCTCTA	167 69552
167		183 69602
ころうつつ		

7	84 GlyPheGlyIleGlyGlyV	IProGI	200
969	03 66	rerective CATE Treerie	2
2.969	00 eLeuProMetLy ::: 53 TGTTCCTGCTCC	SAlaArgAlaLySCysIleLeuLeuIleGluValPheT ::: ::: AACTAGAGGAACTTGGATGGTAGTATTTTCTGCCTTTT	217 69702
	17 rpAlaIleGlyT	nlpa	224
269	03 GGACTGTTGGGACCA	CTTCTCTTGCTTGGGTATGATATT	69752
2	224		224
169	753 TCCCTGGTATTTTAAAC	GAATATCTGTACTTTTACTTGGTGG	69802
2	224		224
869	803	GCAAAGGTCAATAAGAAAGTGCCCTGTTCTGCATTCTAATGAAGC	69852
2	225	val	225
869	853 CTACATTCTCAI	ATGTAACTATCTTTAGGCCCTGTCAT	69902
2	226 ValLeuAlaValPhe	alLeuAlaValPhevalMetProSerLe	235
669	903	CATGCTAATTGCAGACAGTAATGCCCAAATT	69952
	235	uGlyrrpArgTrpLeuLeuIleLeuSerAlaValProbeuL	249
669	953	GCATTATCTGCTGTCCCATCTTTCGTCCTGC	
700	249 euLeuPheAlaValLeuCy. 003 TTTTATTTATGTTATT	sPheTrpLeuProGluSerAlaArgTyrAsp 	265 700 4 3
2	266 ValLeuSerGlyAsnGlnG	<. ⋅	282
700	044 TGCATGAAAGGCAGAGT	::: ::: AACAGAAGCCATGGATGTACTGGAGAAAATGGC	70093
7	282 aThrGluAsnGlyAlaProMetP	MetProLeuGlyLysLeuIleIleSerArg.	86
700	094 TAGATTG	cercredadecereta	70143
N	298		298
701	144 ACATTGA	AGATGAACTTTCAACATCTGAGTCTACAACACTTCTTGCT	70193
7	299GlnGluAspArgG	lyLysMetArgAsp	307
701	: 194 GATGCTG	::IIIIII AAGAAGATGACACCATCATTGAAGACAAAGTTTCCAGTTTTGG	70243
m	308	LeuPheThrProHisPheArgTrpThrL	318
702	244	CTGCTGTCGCCAAAATTGATACGTGCAACTC	70293
r.	318 euLeuLeuTrpPhelleTr	euLeuLeuTrpPheIleTrpPheSerAsnAlaPheSerTyrTyrGlyLeu	334
702	294	CTTTGGAAATGCATTTTCCTATTATGGAATT	70343
(**)	335 ValLeuLeuThrThrGluI	ValLeuLeuThrThrGluLeuPheGlnAlaGlyAspValCysGlyIleSe	351
703	344	TAAGTAACGGTAATAGGATATGTGCA	70388
	351 rSerAr	gLysLysAlaValGluAlaLysCysSer.LeuAlaCysGluTyr ::: ::	29
703	389	GAATCCATACACTCAAATGATGCAAGCTTAT	0
.,	89	LeuSerGluGluAspTyrMetAspLeuLeuTrpThrThrLe	381
704	32	TAGCTTTGCAGGTTTGTTTTTTTCTGTACAL	Ω

Direct Submission "Submitted (14-MIG-2001) Cereon Genomics, 45 Sidney Street, Submitted (14-MIG-2001) Cereon Genomics, 45 Sidney Street, Cambridge, MA 02139, USA Location/Oualifiers 111286 /organism="Aqrobacterium tumefaciens" /strain="C58" /db_xref="taxon:358" /1181128 /gene="AGR_C_4098" /gene="AGR_C_4098" /note="AGR_C_4098" /note="ARRY01000 Street	IMITARARALYEGRLAPSLDDVHALAEPVLEHRMALTFAARAEGMSVRDVIAALVEQA KN" 11592079 / gene="AGR_C_4100" 11592079 / gene="AGR_C_4100" / note="hypothetical protein" / codous_tart=1 / trans_Ltable=1 / trans_Ltable=11 / trans_Ltable=11 / product="AGR_C_4100p" / protein_id="AAR87996.1" / product="AGR_C_4100p" / protein_id="AAR87996.1" / trans_lation="MPVASIGQIVDKTPGSEVLARARGRALVPDCMVEAKRIANTVT / codous_tart=1 / trans_lation="MPVASIGQIVDKTPGSEVLARARGRADHTYVRDREWEAAHTIMLMA AGWHGRRKAIGGSPREMALMALAEILARSGERIGCPGIMEPVSARNAAERLA AGWHGRRKAIGSSPREMALULMALAEILARSGERIGCPGIMEPVSARNAAERLA AAIMHAPLTSGMPDTSMIRGASDIVLIGPFLDDARNVMERISPLARRGLRGMNFV FHRTDHHASERLAVAVHMYLSGAPAGGGGHR" / gene="AGR_C_4102" / gene="AGR_C_4102" / gene="AGR_C_4102" / codon start=1	/transl_table=11 /product="AGR=C_4102p" /product="AGR=C_4102p" /product="AGR=C_4102p" /product="AGR=C_4102p" /product="AGR=C_4102p" /product="AGR=C_4102p" /product="AGR=C_4102p" /db_xref="G1:15157411" /db_xref="Agr="G1:15157411" /dene="Agr="G1:15157411" /dene="Agr="G1:151574111" /dene="Agr="G1:151574111" /dene="Agr="G1:151574111" /dene="Agr="G1:151574111" /dene="Agr="G1:15157411" /dene="Agr="G1:151574111" /dene="Agr="G1:151574111" /dene="Agr="G1:151574111" /dene="
TITLE Dir JOURNAL SUK Can FEATURES SOURCE Gene CDS	aua6 GDS	gene
381 u	451	508 uProlleGluThrLysGlyGlyGlyGlyLeuGlnGluSer 520 : :::

```
alignment_block:
US-09-911-667A-2 x AE008141/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  568.50
1.846
60.870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8695
                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MSHPHSGSFGLFMSKHDLVYLTEDASHDAIIDLINEEAFGPGRH
TRAAARIREQGPHDRSLSFVCADDGETIASVRWTPVLAGAVKGHMLGPLAVRPSHKNM
GIGRELVRIAIAAARRKGSEAVILIGDPPYYWPLGFEKVAYAALDFPGPVDPNRVLVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /translation="MKPKSGANRRLEKNTMNFVLSDVADAEAEKA!KDFLVAVNLARFGESDKRDLNITIRNDDNSVTGGLVGHTARGWLYVQLLFVPFAMKGQGIAPKLLAMAEE
GESDKRDCNITIRNDDNSVTGGLVGHTARGWLYVQLLFVPFAMKGQGIAPKLLAMAEE
COMPLEMENT (7485.8798)
/gene="AGR_C_410""
complement (7485.8798)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NRMLVWORRAPLDAGTGLEOPPVYKGGGIFSPALKOREMMILAIWFLVSVSYYCVFTW
MPAKLAGDGFGFVRGYGFLVLVALAQIPGYALAAYGVEKWGRRPTLIGFCLLSALGCL
LFTLASAGAMAASLLIMSFALLGTWGALYAFTPELKPFESRATGMGAAGAMARLGGL
LGASLLGYALAGGFGVALGIFAGLLVLAAIAATAHINAETRQVALT"
complement (8888 .. 9493)
/gene="AGR_C_4108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="AGR_C_4107p"
/product="AGR_C_4107p"
/protein_id="AAK88000.1"
/db_xref="C01:15157414"
/translation="MTAITMDAERAGAGAYQRRLMGIFGLWAADAMUVLAVGFTA
ASIAATFGLTYPQAALGTGTAFFFGMLLGAAGFGRLADRYGRRRVLIVTVACDALFGVL
SIFSPDFTILLUVLRFLTGAAVGGTLFVDYAMMAEFLDAKNRGKWLVFTGFWAVGTTLI
                                                                                                                                                                                                                                                                                                                                                        ISVDPPQGQTVMLGGCGPPLJVLNRGGEGRVAMLLSDQGWLWARGFEGGGPHYALYKR
IAHWLMKEPELEEEALTARANGRTLQITRQTIGDDPGQASVRFPSGKTENMAFTTTEP
GLYRIERRMDETGLFEIKNGDFTTLVHVGAVDAPEFKAMISTTETLKPLADATKGSVH
RVADNSGRIALPDILPVRGDIRVADEDRMLIRLTDETVLKGVNTLPLFAGFAGLGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VALAAWGASLAGVADAWRYIFAVTAFPAVLGLGLRFLVPESPLYLLRTGRSEEAKAVV
                                                                  /product="AGR_C_4105p"
/protein_id="AAK87998.1"
/protein_id="AAK87998.1"
/translation="MTLTFAPFLPWIVIA1LAVAALALSFIGIWRGVRGAWLRGLALV
                                                                                                                                                                           ALLAATANPLLTQEEREPLSTIVPVIVDRSQSQDVQDRPQWTDTALETLKDRLSKFPR
IEPRIVEVRDNGESDSPSTQLFSALSSAVSDVSPSRVGGAIFLSDGOIHDIPNALLPNA
EQALGFRAPVHGLITGKADBEPRRILEIVRAPRFGIVNEEQQLTLRVFDDGRPAGGSA
EVYTKANGEEIATLGAPTGQFTPFSFKVPRGGNNVMEFSVAELFGEVTAANNRAVHLI
EGIRQNLRVLLVSGEPHAGERAWRNLLKSDASVDLVHFTILRPPEKQDGTPINELSL
                                                                                                                                                                                                                                                                                                       AFPTRELFVEK INDFDLIIFDRYQHRGVLPILYYDY IAQYVEKGGALLIAAGPEHAGO
                                                                                                                                                                                                                                                                                                                                  DSIAMTPLASVLPAQPTGQVHQAAFYPRLSEAGKKHPVTRGLEGSGNEPPQWGRWFRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="probable acetyltransferase VC0655 {imported} vibrio cholerae (group Ol strain N16961)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="AGR_C_4109"
/note="HYPOTHETICAL 37.4 KD PROTEIN IN EXUR-TDCC
INTERGENIC REGION (0328)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(7485. .8798)
/gene="AGR_C_4107"
/note="probable sugar transporter - Deinococcus
radiodurans (strain R1)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ?VGDDVHQRLKGKIGWRKCEAAMPAAAAEDESFEEPLRVYG"
'note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="AGR_C_4108p"
/protein_id="AAK88001.1"
/db_xref="G1:15157415"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transl_table=11
/product="AGR_C_4106p"
/protein_id="AAK87999.1"
/db_xref="GI:15157413"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="AGR_C_4106"
7017. 7475
/gene="AGR_C_4106"
/note="(L25828) ORF 12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'gene="AGR_C_4109"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement (8888./
/gene="AGR_C_410
                                                 /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LAFSALWWREGR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7017.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
```

/codon_start=1

```
/note="hypothetical protein"
/codon_start=1
/codon_start=1
/product="AGR_C_4111p"
/product="AGR_G_11];
/db_xref="G1:15157417"
/db_xref="G1:15157417"
/translation="MHFVFLUFRGATLGVRAACFDEKGRIFLVRHTYLPGWYLPGGGV
Frenslation="MHFVFLUFRATER PROMISES TO PROMISE STREAM TO PROMISE STREAM TO STR
                                                                                                                                                                                                                                                                                                                                                                                                                                             TPGATODHLEGSSTIMOVYTRADPTYSGRVTVPVLMDKKRGTIVSNESAEIIRMFNVA
FNDLTGSDADYYPKALRAEIDALNDVIYDTVNNGVYRAGFATTQDAYQONAVKVFETL
DMLEDRLKDRRFLFGSEQTEADWRLFTTLVRFDPVYVGHFKCNIRRIHDYPHLTGYLR
DLYQTPGVPDTVDMRHIKEHYYRSHRTINPTGIVPIGPELDLTMAHGREALS*
                                                                                                                                                                           /translation="MKIA11RKIPTRPEQISRPSHSARAGPETHCSMPCGFAASRKAG
RIAVKETIKEIVMGMLVEGVWKDVWYDTKETKGHFKRSASQFRNWYTVDGAVGPSGEG
GFEAEKDRYHLYVSFACPWAHRTLIFRKLKKLEDLISVSVVDPLMLENGWEFKPEGER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8545 GCCGCCGGGTGCTGATCGTCACCGTGCCCTGCGATGCGCTGTTCGGCGTG 8496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ArgLeuProSerTrpGlnValAlaLeuLeuThrSerValValPheValGl 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     132 yMetMetSerSerSerThrLeuTrpGlyAsnIleSerAspGlnTyrGlyA 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       149 rgLysThrGlyLeuLysIleSerValLeuTrpThrLeuTyrTyrGlyIle 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATGITGCTGGGTGCTGCCGGTTTCGGGCGGTTGGCGGACCGCTATGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16 PheArgArgThrGlyGluSerAlaArgSerGluAspAspThrAlaSerGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           32 yGluHisGluValGlnIleGluGlyValHisValGlyLeuGluAlaValG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      49 luLeuAspAspGlyAlaAlaValProLysGluPheAlaAsnProThrAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             66 AspThrPheMetValGluAspAlaValGluAlaIleGlyPheGlyLysPh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               eGlnTrpLysLeuSerValLeuThrGlyLeuAlaTrpMetAlaAspAlaM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      etGluMetMetIleLeuSerIleLeuAlaProGlnLeuHisCysGluTrp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8645 GGCCTGACAGTGCCGCAGGCGCTGCAGACCGGAACGGCGTTCTTTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              to reverse of: AE008141 from: 1 to: 11286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length: 506
Gaps: 11
Percent Identity: 29.051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8829 TGAAAGTCGATTTCGGCACGGGGGGGCGAGATG.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(10764, 11192)
/gene="AGR_C_4111"
complement(10764, 11192)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="AGR_C_4111"
/note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http://note="http:
/protein_id="AAK88002.1"
/db_xref="G1:15157416"
```

us-09-911-667a-2.rge

Leuser Alabhe Alaproval Tyrser Trp II eLeuval Leuvagg Jyle [8.5	39	4 4	31	44	260 8199		93	90	26	42 95	58	75 91	92 86	07 81	24	4 7	457
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 LeuSerAlaPheAlaProValTyrSerTrpIleLeuValLeuArgGlyL ::: ::::	2 2	ω ω	ν ω	- 8	4 80	- 8	7 8	<pre>3 ysLeuflelleSerAr ::::: 8 CCGGGCTTTTC</pre>	0 ThrproHisPheArgTrpThrThrLeuLeuLeuTrpPhe11eTrpPheS ::: ::: :::	26 rAsnAlaPheSerTyrTyrGlyLeuValLeuLeuThrThrGluLeuP :::	2 heGlnalaGlyAspValCysGlyIleSerSerArgLysLysAlaValGl 	9 AlaLysCysSerLeuAlaCysGluTyrLeuSerGluGluAspTyrMetA :::	5	2 rpllelleAspargLeuGlyArgLysLysThrMetAlaLeuCysPh::::::::::: ::: 	8 2	4 nValLeuThrLeuLeuLeuPheIleAlaArgAlaPheIleSe	1 heGinalaalaTyrValTyrThrProGluValTyrProThrAlaThrArg:::

```
/gene="swal44/"
/gene="swal444/"
/gene="swal444/"
/gote="glimmer prediction; global similarity to Benk, a
benzoate transport protein in P. putida; Pfam domain
homology to sugar and other transporters"
/codon_start=1
/transl_table=11
/product="putative transmembrane transport protein"
/protein_id="AAK65448.1"
/db_xref="G1:14523916"
/translation="MLIAARQLEKGRMTTITVDDALDRAGTGTYQRRLMAIFGLVWA
ADAMQVLANGFTAASIAAFGLTVPQALQTGTLFFGAMLFGAAGFGRLADRIGRRRVL
IATYACDAYGGLESYFRODFTVLLLERFLTGAAVGGTLPVDYAMMAEFLPARNGGRWL
VMLEGFWANGTLIYALAMAAASLAGVADARRYIRATPALIGGLERFADLRKRSLML
ILRGKTSEARAIVDEILVNUGKRMLGAGASLLYPPPTASAGIFSADLRKRSLMILAIW
FLYSISYYGYFTWMPPRLAGGGFGFRRGYGFLVVLALAQIPGYALAAYGVEKWGRRPT
LIGFCLLSALGCLLFVAAGTAMLIGVSLLIMSFALLGTWGALYAYTPELYPTASRATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Jackson to 11856)
Barnett, M.J., Fisher, R.F., Jones, T., Komp, C., Abola, A.P.,
Barnett, M.J., Fisher, R.F., Jones, T., Komp, C., Abola, A.P.,
Barloy-Hubler, F., Bowser, L., Capela, D., Gallbert, F., Gouzy, J.,
Gurjal, M., Hong, A., Huizar, L., Hyann, R.W., Kahn, D., Kahn, M.L.,
Kalman, S., Keating, D.H., Palm, C., Peck, M.C., Surzycki, R.,
Wells, D.H., Yeh, K.-C., Davis, R.W., Federspiel, N.A. and Long, S.R.
Direct Submission
Submitted (29 MAR-201) Biological Sciences, Stanford University,
371 Serra Mall, Stanford, CA 94305, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 11856)
Barnett,M.J., Fisher,R.F., Jones,T., Komp,C., Abola,A.P.,
Barloy-Hubler,F., Bowser,L., Capela,D., Galibert,F., Gouzy,J.,
Gurjal,M., Hong,A., Huizar,L., Hyman,R.W., Kahn,M.L.,
Kalman,S., Keating,D.H., Palm,C., Peck,M.C., Surzycki,R.,
Wells,D.H., Yeh,K.-C., Davis,R.W., Federspiel,N.A. and Long,S.R.
Nucleotide sequence and predicted functions of the entire
Sinorhizobium mellioti pSymA megaplasmid
Proc. Natl. Acad. Sci. U.S.A. 98 (17), 9883-9888 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sinorhizobium meliloti.
Sinorhizobium meliloti
Bacteria; Proteobacteria; al<sub>i</sub>na subdivision; Rhizobiaceae group;
Rhizobiaceae; Sinorhizobium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS AE007266 11856 bp DNA BCT 15-AUG-2001
DEFINITION Sinorhizobium meliloti plasmid pSymA section 72 of 121 of the
                                                                                                                                                                         7620 GGCGCCGTCACTGCTTATGCCATTGCGCAGGGTTTTGGGGTCGCGA 7571
7570 TIGGCATCTTTGCCGGGCTACTGGTGCTGGCCGCCATTGCGGCGACCATG 7521
                                                                                                                474 eThrProPheIleAlaGlnValMetLeuGluSerSerValTyrLeuThrL 491
                                                                                                                                                                                                                                        euAlaValTyrSerGlyCysCysLeuLeuAlaAlaLeuAlaSerCysPhe 507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1...11856
/organism="Sinorhizobium meliloti"
/strain="1021"
/db_xref="taxon:382"
/plasmid="pSymA"
complement(116 .1468)
/gene="SMa1447"
/gene="SMa1447"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complete plasmid sequence. AE007266 AE006469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AE007266.1 GI:14523915
                                                                                                                                                                                                                                                                                                                                                                                                                          7520 ATCAATGCGGAAACACGG 7503
                                                                                                                                                                                                                                                                                                                                                               508 LeuProlleGluThrLys 513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_name: gb_ba:AE007266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq_documentation_block:
LOCUS AE007266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                              491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                              . .
```

gene

CDS

```
/processin_id="AAK65454.1"
/db_xref="G1:14523922"
/db_xref="G1:14523922"
/tb_xref="G1:14523922"
/tcanslation="MTDVETSWEELEAVCLEALTLHGAAAETARAVAGAITRAEADGN
/tcanslation="MTDVETSWEELEAVETBATTRCVTVTVDARSGFAHPAIAAGTPALIDI.
AKQAGLAAMAVRNSYNCLALGHHVRPLADAGLIGICVSNAPASVAPPGATRALFGTNP
-tarAVDSKEGAPTIVVDQSMASVYTRFBHILRKDRGBAIPIGWAQDGNGQPTTDAATGL
EGSILLPAGGRKGANTALLVVVILAAALTGSALSTEASAFGNEEGGPPHYGQFILAIDPD
HFAAGHFSEAMDNLVASHDAAGVRLPGHFGRKQPVCVDADLWKRAVILSKSKNRQKPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GIGECTVAPDOCTGTATILY RLAKHLYGHSPHBYAPLITARIFHOEYLGHGANIMRAND
IFSGIDMAMWDLOGKLAGLEVHQLLGGAHRRAVGYEFFLGGETAEELARDAAVGHAOG
IFSGIDMAWNDLOGKLAGLEVHQLLGGAHRRAVGYEFFLLGGETAEELARDAAVGHAOG
IESGIDMAWNDLOGKLDGEITAAVRGETCDARLELDANGWSHDAINMCRKLEKYDIEF
IEQPTYSWSIPAMAHVERWOLIPTVADQAAFTLYDYVEICRORAADMICIGPREIGGI
OPPMAKAAAVAEAAGLKICIHSSFTTGITTGAEHHIGLAIPNLDDGNOIMWQLVQEDIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /transl_table=11
/product-"Putative muconate cycloisomerase"
/product-"ad="AaK65455.1"
/db_xref-"GI:14523923"
/translation="MVKISNVRVRPLVLPLKQPYHWSYGIRESFAVNLIEIEADDGTV
                                                                                        /translation="wrftgrcyrahdprwafkpasgdgaaikgaffnpkgvktlylal
Simmavkbanggfahkidpcvlcsydidcabiabltaergraehgvsleemacswaga
Faegrrpaswaiynrlhprgtagilvpsfapgteagdrnlvlwtwgpdlphrldvydp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /translation="MAQAOKIQSDGGPLILSYMDKGGKIAVQOVAVGFGMSKTQLAET
AGLARETLYRPERSRCTKTQNRLREMLEIISRVTDWAGGKEQAMAWYRAQPLPAFGGR
TAEALVKDGKAAAAVRDYLDHMALGGFA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /function="Small molecule metabolism; Central intermediary metabolism; amino acids"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="glimmer prediction; global similarity to muconate cycloisomerase in P. putida (GI: 77758); Pfam domain similarity to mandelate racemase / muconate lactonizing enzyme family"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(8311..9201)
//gene="XMA1462"
//gene="XMA1462"
//function="Cell processes; Transport of small molecules"
//note="glimmer prediction; global similarity to
choline-binding protein precursor from B. subtlis
(GI:7404430) and several pretaive ABC transporter
proteins; adjacent ORFs encode other putative members of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             function="Small molecule metabolism"
/functe="glimmer prediction; global similarity to
malate-dehydrogenase from M. fervidus (GI: 80950)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SSPDLTPKNGWLDAFRKPGLGFQLAEDLVAEGEGRYAASR"
                                                                                                                                                                                                                                                                                                                                                                   /function="Miscellaneous; Unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="Hypothetical protein"
/protein_id="AAK65453.1"
/db_xref="GI:14523921"
/product="Hypothetical protein"
/protein_id="AAK65452.1"
/db_xref="G1:14523920"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    choline transport system"
                                                                                                                                                                                                                                                                                                                                                                                              /note="glimmer prediction"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(8311. .9201)
/gene="SMa1462"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="SMa1461"
complement(7060. .8184)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="SMai459"
complement(6059. .7063)
/gene="SMa1459"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement(7060. .8184)
                                                                                                                                                                                                                                      complement(5562. .5951)
                                                                                                                                                                                                                                                                                                   complement(5562, .5951)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(6059. .7063)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /EC_number="5.5.1.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /transl_table=11
/product="Putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transl_table=11
                                                                                                                                                                                                                                                                                                                                 /gene="SMa1456"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene-"SMa1461"
                                                                                                                                                                                                                                                                    /gene="SMa1456"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start*1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                           SGRLPKDQLSWG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /traislation="wendershmerrmiapcfmddtleclfrhgvdaguldpraislation" wenderdefgegarpmragsfallchailstatlehalr
sivtgpvsanoygafwhavaqamddeffgegarpmragsfaltichailstatlehalr
frirentenphgelvvengladvivledgagatrsafayrffwiilhendruigrr
lpirwvdfrozappagcidyrlefgapvyfdogrtrivfpadstylklppirdbralkhfu
rhapanilvryrhohagcisaairokhlatapsawpgferaiaarmiaapthrrekroge
otyrsikedlerralamealadgrtnvaqlavelgfsepsafhrafrkwyfgkspaoffrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /translation="MOLKSRVFIVTGASSGLGAAVTRMLAGEGATVLGLDLKPPAGEE
PABELGAAVKERNADYTHGADATAALFAKQEEGTHVGLIVACAGTAFGEKILGRSGPH
ALDSFARTVAVNLIGTFNMIRLAAEVAKSGGEPDADGERGVIVNTASIAAFDGGIGGAA
YAASKGGVAALTLPAARELARFGIRVVTIAFGIFDTPMMAGMPQDVQDALAASVPFPP
                                                                                                                                                                                                                 /note="glimmer prediction; global similarity to PhaA, a thoiolase from P. putida (GI:1857942); global similarity to acetyl-CoA acetyltransferase from C. acetobutylicum and A. eutrophus (GI: 1174677); Pfam domain nomology to thiolase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /traislation="MNKQDPVVIVGQARTPLGSFQGELKDLSAADLGAAAIVDALKKA
GLAPDAVDVBVWGCVLTAGGQCAPAALGACLPFWGGATTVNKMCGSGMKAAMLAH
DLIKAESASIVVAGGAESMTNAHPYLLDRAGGGTROFTRUKULDGLEDAYDKGKL
MGSFAEDCAEAYQFTRSAQDEVAIASLEKAQKASADGSFAEEIVPLSIASGKGERTVN
LIDEDQVARALDKIPLLKDRIPLTAANASISISGAAALUMRRSAADKOGTGPLA
LIDEDQVARATHANAPLEPTAPTGGTTTAANASISISGGAALUMRRSAADKOGTGPLA
LIDEDQVARATHANAPLEPTAPTGGTTAALGETTAANASISIGGAAALUMRRSAADKOGTGPLA
LIDEDQVARATHANAPLEPTAPTGGTTAALGETTAANAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              global similarity to eukaryotic
(GI: 2569966); Pfam domain
             MGAAGAMARLGGLLAPSLMGLVVAQSFGLAIGIFAGLLLVAAVAAFLIDAETRRVSLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /function="Small molecule metabolism; Central intermediary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /_inction="Miscellaneous; Not classified regulator" / function="Miscellaneous; Not classified regulator" / note="glimmer prediction; global similarity to OruR f P. aeruginosa (GI: 1657970) which regulates ornithine utilization; pfam domain similarity to N-terminal helix-turn-helix motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="Putative transcription factor"
/protein_id="AAK65451.1"
/db_xref="GI:14523919"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RLGRAEEYAALVKHICENTMLNGEVIRLDGALRMAPR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement(5047. .5565)
/gene="swal455"
complement(5047. .5565)
/gene="Swal455"
/function="Miscellaneous; Unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="Probable thiolase"
/protein_id="AAK65449.1"
/db_xref="G1:14523917"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="glimmer prediction;
3-hydroxyacyl-CoA type II
similarity to short chain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="glimmer prediction" /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /protein_id="AAK65450.1"
/db_xref="G1:14523918"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(3133. .3900)
/gene="SMa1452"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(3133. .3900)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NATQTDFAESSSPRKRTQPQES"
                                                                                                                                                    complement(1918. .3108)
/gene="SMa1450"
                                                                                        complement(1918. .3108)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="Probable"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                             /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="SMa1454"
3995. 5065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="SMa1452"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3995. .5065
/gene="SMa1454"
                                                                                                                      "SMa1450"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             metabolism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3995.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       F1SG"
```

gene

gene

dene

CDS

```
-- --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1024
                                                                                                                                                                                                           1274
                                                                                                                                                                                                                                                                                                                                                                    1224
                                                                                                                                                                                                                                                                                                                                                                                                                    1074
                                                                                                                                                                         HisPheArgTrpThrThrLeuLeuLeuTrpPheIleTrpPheSerAsnAl 328 :::||| :::||| :::||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          232 tProSerLeuGly.......TrpArgTrpLeuLeulleLeuSerA 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AlaArgTyrAspValLeuSerGlyAsnGlnGluLysAlaIleAlaThrLe 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             278 uLysArgIleAlaThrGluAsnGlyAlaProMetProLeuGlyLysLeuI 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATGAGATCCTCGTCAACGGC...AAATGCGACTTGGCGCGGCG 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                               166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100 lumetMetIleLeuSerIleLeuAlaProGlnLeuHisCysGluTrpArg 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SerAlaPheAlaProValTyrSerTrpIleLeuValLeuArgGlyLeuVa 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           295 lelleSerArgGlnGluAspArgGlyLysMetArgAspLeuPheThrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATCGCTGGTTCCGCCGCCGCCGACGCCGCGAGTGCCGGGTATTTTTCCCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1323 AGGTGCTGGCGTCGGCTTCACCGCCGCATCGATCGCCGCCACTTTCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                               150 ysThrGlyLeuLysIleSerValLeuTrpThrLeuTyrTyrGlyIleLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       183 IGlyPheGlyIleGlyGly...ValProGlnSerValThrLeuTyrAlaG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGCCTCGCCGGCGTCGCGGATGCCTGGCGATACATCTTCGCAGTGACGC
                                                                                                                                                                                                                                                                                                                                                          133 tMetSerSerThrLeuTrpGlyAsnIleSerAspGlnTyrGlyArgL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1123 TCCGTCTTTGCGCAGACTTTACCGTTTTGCTTCTGCTGCGGTTTTCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          245 laValProLeuLeuLeuPheAlaValLeuCysPheTrpLeuProGluSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCGCTTTATCTGCTCCGCCTGGGAAAGACGTCCGAGGCGAAGGCCATCGT
                                                                                                                                                                                                                                                                                                                                     117 LeuProSerTrpGlnValAlaLeuLeuThrSerValValPheValGlyMe
                                                                                                                                                  67 ThrPheMetValGluAspAlaValGluAlaIleGlyPheGlyLysPheGl
                                                                                                                    from: 1 to: 11856
         458
                          Gaps: 9
Percent Identity: 30.131
           Length:
                                                                                                                   Align seg 1/1 to reverse of: AE007266
                                                                         alignment_block:
US-09-911-667A-2 x AE007266/rev
         540.50
1.917
61.572
              Quality:
Ratio:
                                          Percent Similarity:
alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 826
```

```
Thermotoga maritima.

Thermotoga maritima.

Thermotoga maritima.

Bacteria: Thermotogales; Thermotoga.

Bacteria: Thermotogales; Thermotoga.

Bacteria: Thermotogales; Thermotoga.

Roses: I to 1764).

Relson, K.E., Clayton, R.A., Gill, S.R., Gwinn, M.L., Dodson, R.J.,

Retr, D.M., Heterback, T.R., Malek, J.A., Linhler, K.D., Garrett, M.M.,

Stewart, A.M., Cotton, M.D., Pratt, M.S., Phillips, C.A.,

Richardson, D., Heidelberg, J., Sutton, G.G., Fleischmann, R.D.,

Richardson, D., Heidelberg, J., Sutton, G.G., Fleischmann, R.D.,

Eisen, J.A., Fraser, C.M. et, all

Evidence for lateral gene transfer between Archaea and bacteria

from genome sequence of Thermotoga maritima

AL Nature 399 (6734), 323-329 (1999)

Be 92287316

2 (bases 1 to 17641)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AE001804 17641 bp DNA BCT 02-JUN-1999
Thermotoga maritima section 116 of 136 of the complete genome.
AE001804 AE000512
AE001804.1 GT:4982160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    208
                                                                                                   340 luLeuPheGinAlaGlyAspValCysGlyIleSerSerArgLysLysAla 356
                                                                                                                                                                             373
                                                                                                                                                                                                                                                                                                                      406
                                                                                                                                                                                                                                                                                                                                                                                           423
                                                                                                                                                                                                                                                                                                                                                                                                                               408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       472 aLeulleThrProPhelleAlaGlnValMetLeuGluSerSerValTyrL
                                                                                                                                                                                                                                                                                                                      gAsnValLeuThrLeuLeuLeuPhelleAlaArgAlaPhe...IleSerG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            456 ThrargAlaLeuGlyLeuGlyThrCysSerGlyMetAlaArgValGlyAl
579 GATTIGCGCAAGCGCAGTCTGATGATCCTGGCCATCTGGTTTCTGGTTTC
                               .....LeuThrThrG
                                                      357 ValGluAlaLysCysSerLeuAlaCysGluTyrLeuSerGluGluAspTy
                                                                                                                                                                                                              TA....TA
                                                                                                                                                                                                                                                373 rMetAspLeuLeuTrpThrThrLeuSerGluPheProGlyValLeuValT
                                                                                                                                                                                                                                                                                ceecrecicercerecentreeccaearceceecrargeceree
                                                                                                                                                                                                                                                                                                                                                                                           PheValIlePheSerPheCysSerLeuLeuLeuPheIleCysValGlyAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCCATGCTGATCGGCGTCTCGCTCCTGATCATGAGCTTCGCCCTGCTCG
                                                                                                                            579 AAGGCTTC......GGCTTCGTTCGCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CysPheLeuProlleGluThrLys 513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTCTGATCGACGCCGAGCGCCC 134
                                     328 apheSerTyrTyrGlyLeuValLeu. ::::|||||||||||||||||::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17641 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name: gb_ba:AE001804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq_documentation_block:
LOCUS AE001804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                     457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 909
                                                                                                                                                                                                                                                                                          554
                                                                                                                                                                                                                                                                                                                           390
                                                                                                                                                                                                                                                                                                                                                               504
                                                                                                                                                                                                                                                                                                                                                                                                 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         423
                                                                                                                                                                                                                      556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
```

CDS

FEATURES

CDS

CDS

```
SNADVRVFEDAYKLVKMGADAHFVAKEILENKRFEDOFKLFAEVLERLGLLENGKIAYS
YIDYDTYLRHNCTDEDSAGFYGELRSIRGVEVAVLFMEFPRGKIHVSMRSKOWFNVB
YFELGGGGFBRAAGVYFEGKKIEEVIPRVINHLLKKFKEGVESESEKIPEGDVLGG"
COMplement (6452. .7249)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KAAUDYKIPYVEKFPYIDKIEENPNFOPELLVVVDASSPORIGKFQDLLDKVPSVVI
DHHSTNTNFGNWNWVDPSFAATAQMIFRINKALGVEYDSNLATLNYLGIATDTGFFRH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MDEIVKVLSQHDRILVVGHIMPDGDCVSSVLSLTLGLEKLGKEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          percent identity: 0.00; identified by
                                                                                                                                                  /product="conserved hypothetical protein, GGDEF domain"
/protein_id="AAD36661.1"
/db_xref="G1:4982165"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="similar to GB.AE000657 percent identity: 58.22;
identified by sequence similarity; putative"
/codon_start=1
                                                              /note="similar to GB:AE000657 percent identity: 60.77; identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  compleant(6452. .7249)
/gene="TM1596"
/note="similar to Sp:P46354 PID:944944 PID:1303996
GB:A009126 percent identity: 68:54; identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /transl_table=11
/product=conserved hypothetical protein"
/protein_id="AAD36662.1"
/db_xref="G1:4982166"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(5450. .6451)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="TM1595"
complement(5450. .6451)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="similar to
                                                                                                                                       /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="TM1595"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7299. .8363
/gene="TM1597"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
                                                /gene="TM1594"
                                                                                                                    /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
Nelson,K.E., Clayton,R.A., Gill,S.R., Gwinn,M.L., Dodson,R.J.,
Haft,D.H., Hickey,E.K., Peterson,J.D., Nelson,W.C., Ketchum,K.A.,
McDonadd,L., Utterback,T.R., Malek,J.A., Linher,K.D., Garrett,M.M.,
Stewart,A.M., Cotton,M.D., Pratt,M.S., Phillips,C.A.,
Richardson,D., Heidelberg,J., Sutton,G.G., Fleischmann,R.D.,
White,O., Salzberg,S.L., Smith,H.O., Venter,J.C. and Fraser,C.M.
Direct Submission
Submitted (01-JUN-1999) The Institute for Genomic Research, 9712
Medical Center Dr. Rockville, MD 20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /protein_id="AaD36660.1"
/db_xref="G1:4982164"
/db_xref="G1:4982164"
/translation="MEKTKKIAVMSGKGGVGKTTVAVNLAVALAAEGYQVGLLDLDL.H
GPNVQRMLGVSLPPSEGEK VPAKYGDSLKVFSLAMILQEGAPVIWRGPLKHKAIEQL
TRDVGMGDLDYLICDLPPGTGDEALSTFQIIKPDAVIVSTPQKVAGDDVRRAINFVK
RLSGKILGLVENMSYLVCPNCGEKIYVFGKGEEKLAEEFGIPLIARIPMDPEVVSLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product-"translation initiation factor 1F-3"
/protein_id="AaD36657.1"
/db_xref="G1:4982161"
/translation="MIGVMPTRKALELARERGLDIVLVAPNENPPVARIMDYGRYRYU
LTKROKENKKRRYOWMKOMKFRLKIDEHDYOTRVKHIRRFLEDCHKVRVVVMFIGREMM
FAEKGREILERVIKDTEDLATVESPFKMEGRDMMWLKPRKNS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="ribosomal protein L35"
/protein_id="AAD36658.1"
/protein_id="AAD36658.1"
/db_xref="c1:4982162"
/translation="MFWKYPRSAARFRITKNGK!MRNHAVRSHKTCKKRRNALRAL.RKKDVVSSADKNRVLRLLGKK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="G1:4982163"
/translation="MRVKRAVHAKKKKKKYLKAAKGYRGALSRRYKLAKQMYVRSKWY
SYVGRKQKKRDMRKLWITRINIAARNBGLKYSELIHGLKLAGVSINRKMLSELAVNDP
                                                                                                                                                                                                                                                                                                                                                                                       /note="similar to GB:AE000657 percent identity: 74.38; identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="similar to GB:Pyro_h percent identity: 72.27; identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="TM1592"
/note="similar to SP:P55873 PID:1770009 GB:AL009126
percent identity: 69.57; identified by sequence
similarity; putative"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="similar to SP:P55874 PID:1770008 GB:AL009126 percent identity: 65.62; identified by sequence similarity; putative" /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="conserved hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product="ribosomal protein L20"
/protein_id="AAD36659.1"
                                                                                                                                                                                                                                                  /organism="Thermotoga maritima"
/db_xref="taxon:2336"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEGRPAVVYKRGTVIEEEFKKIVEKVLSL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(1882. .5502)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EAFKEYVKIAKEALAS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1173. .1916
/gene="TM1593"
1173. .1916
/gene="TM1593"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="TM1591"
595. .792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            806. .1162
/gene="TM1592"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="TM1591"
                                                                                                                                                                                                                                                                                                                                          146. .580
/gene="TM1590"
                                                                                                                                                                                                                                                                                                                          /gene="TM1590"
                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
                                                                                                                                                TITI.E
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                AUTHORS
                                                                                                                                                                                                                                                                                                            gene
```

// Transal_table=11 // Proceduct="Managed-Angleded" // Proceduct="Managed-Angleded-An
--

427	410 eSerPheCysSerLeuLeuLeuPheIleCysValGly
410	394 IleaspargLeuGlyargLysLysThrMetalaLeuCysPheValllePh 1916
	381LeuserGiuPherrosiyyaileuvailii beuirris 13113 TCTACATGATGGTGGCACGAGCTTCCCGGGGTACCTTTCGGCAGCCTACTTC
13	TGGTTCACA
380	euSerGluGluAspTyrMetAspLeuLeuTrpThr
13102	76 CTGGGTGTGAGTGTTGTCAAATCTTCC
364	8 CysglylleSerSerArgLysLysAlaValGluAlaLysCysSerL
13075	
347	rTyrGlyLeuValLeuLeuThrThrGluLeuPheGlnAl
331 13034	314 gTrpThrThrLeuIeuLeuTrpPheIleTrpPheSerAsnAlaPheSerT
12991	12971AAGAGGAACATTTGAAAGAC
314	298 ArgGlnGluAspArgGlyLysMetArgAspLeuPheThrProHisPheAr
7	:
σ	
285	269 yAsnGlnGluLysAlalleAlaThrLeuLysArglleAlaThrGluA
12876	27 CCGGTGTTTCTTAG
569	253 ValLeuCysPheTrpLeuProGluSerAlaArgTyrAspValLeuSerG
252 12826	236 lyTrpArgTrpLeuLeulleLeuSerAlaValProLeuLeuPheAla
12781	219 GG IYThrValPheGluValIvalLedatValPheVarAreCritOcalLedu
2	AGACTCAGGGGA
19	203 MetLysAlaArgAlaLysCysIleLeuLeulleGluValPheTrpAlaIl
O.	18/ ledyfolydrydriodinservalling i lilililil 118/36 ATGGAGGCTTGATGCTTCGTTCAACGCGTATCTTGCAGAATTCACGAGT
	CGTTCGAAACTCTTTAGTTCTGAGAGCCTTTCGGGTTTTGG
187	170
170 12585	154 Lys1leSerValLeuTrpThrLeuTyrTyrGlyIleLeuSerAlaPheAl :::
12535	:: :::::
153	137 erthrLeutrpGlyAsnIleSerAspGlnTyrGlyArgLysThrGlyLeu
137 12485	120 pGlnvalAlaLeuLeuThrSerValvalPhevalGlyMetMetSerSerS 120 pGlnvalAlaLeuLeuThrSerValvalPhevalGlyMetMetSerSerS 121 pl
-	

```
join(10248. .10316,10369. .10436,10486. .10539,10595. .10691)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             join(10248. .10316, 10369. .10436, 10486. .10539, 10595. .10691)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LEDGSLDLLVEYEYGGGTREGFIYCPDKGDTTFLKVOVFTGVCSDRCNPKSNEIGSSI
SMTGACASFSMTDGMGGSTQSVACQVPASSNRALYLPFLLYGLGRSPNFVDELNIAIP
KYADRKEDWKHSLKQIVPNSRIIVLPPSDQYPHWTSRLYVTPSALIVQSLAVIALVCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /protein_id="CaA77450.1"
/protein_id="CaA77450.1"
/db_xref="G1:3881665"
/db_xref="SWISS-PROT: 930639"
/translation="WKKILPIIWLINLVSGSLSLEKKAPDLLGKVCAFGDFNADRWTD
/translation="WKKILDYLEASKFPGFFSFAISKPSLNADFVECSVGDFNGDSRL
DVLYSIRDKOTEITWINGFKLLDYLEASKFPGFFSFAISKPSLNADFVSGSPGFNGDSRL
DVLYSIRDKOTEITWINGFSFEIDEREIFBFFFHYAPIAGHAMAIDVSDGFNTDVLGF
YPNGSMFCTGFNKEGKYNLLVNGCKHEFNAPPROTEITATUV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /protein_id="CAA77447.1"
/db_xref="C1:3881662"
/db_xref="SwISS-PROT: 1930631"
/db_xref="SwISS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MTKESDGSLEMSVWQKTKISWQFRDWVPKLTPAQYPEVGAPVVMDVDSDGELDILVPI
CREDECSHITOMASWSKTKLWGLVACDMQDYTVIKEPFSRVIFRVGEFSLDSFPDMVV
IAQATRANTRPVIKVMDNAECTKCEKNGTRRFEIRAGENIQPKNMSLGVIKMGFFFDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="SwISS-PROT: P30629"
/translation="WansymeatomkvkLavDEmIDDLDKTYLRDMQKSMFQCSARCC
/translation="WansymeatomkvkLavDEmIDDLDKTYLRDMQKSMFQCSARCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(join(4451. .4728,4825. .4974,5021. .5078))
/gene="2x637.14"
complement(join(4451. .4728,4825. .4974,5021. .5078))
/gene="2x637.14"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             join(6271. .6465,6523. .6642,7346. .7658,7714. .7775,7824. .8153,8767. .9252,9311. .9472,9779. .9910)
                                                                                                                                                                                                                                                                                                                                                                                                                               CDNA EST yk217b5.3 comes from this gene
CDNA EST yk217b5.5 comes from this gene
CDNA EST yk340g12.3 comes from this gene
CDNA EST yk340g12.5 comes from this gene
CDNA EST yk428c5.5 comes from this gene
CDNA EST yk428c5.3 comes from this gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MLLMVVVFLHYREKKEDRYERQQQSHRFHFDAM"
/organism="Caenorhabditis elegans"
/db_xref="taxon:6239"
/chromosome="Ill"
                                                                                                                                                                                                                                                                                                                                                                                             'predicted using Genefinder
                                                                                                                                                                             join(3794. .3918,4033. .4240)
/gene="ZK637.2"
                                                                                                                                                                                                                                                                                               .4240)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /protein_id="CAA77449.1"
/db_xref="G1:3881664"
                                                                                                                                                                                                                                                                                          3794. .3918,4033.
="ZK637.2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="ZK637.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
                                                                                                                                                              /clone="2K637"
join(3794. .39
                                                                                                                                                                                                                                                                                               join(3794.
                                                                                                                                                                                                                                                                                                                                                               /dene=
                                                                                                                                                                                                                                                                                                                                                                                                                     /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Coding the control of the control of the control of control of control of control of control of control contro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence 222175.
The end of this sequence (40696. .40699) overlaps with the start of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence 211126.
For a graphical representation of this sequence and its analysis
see:- http://wormbase.sanger.ac.uk/perl/ace/elegans/seq/sequence?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genome sequence of the nematode C. elegans: a platform for investigating biology. The C. elegans Sequencing Consortium Science 292 (5396), 2012-2018 (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Caenorhabditis elegans cosmid ZK637, complete sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida;
Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13463 GCATGGATCTCCCCGATGGCAATGTTTGCCGGTGTGATCGTTCTGATATT 13512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13363 AAACGGAGCAGCGGGAGTATGGCCAAGGATAGCGGGTATAATAGCTCCTT 13412
              13213 AGGACTTGCCGCTGTGGGCCAACGTGAGAGAGATGCTTCGCTTC 13262
                                                                                                                                                                                                                                                                                                                                                                                        460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  508
                                                                                                                                               427 hrLeuLeuLeuPheIleAlaArgAlaPheIleSerGlyGlyPheGlnAla 443
                                                                                                                                                                                                                                   13263 TTGCAGCTGCTTTGGTCCTTTCTTTCTTCTTGAGTGTGTGGGGACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        460 yLeuGlyThrCysSerGlyMetAlaArgValGlyAlaLeuIleThrProP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           477 helleAlaGlnValMetLeuGlu.....SerSerValTyrLeuThrLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             492 AlaValTyrSerGlyCysCysLeuLeuAlaAlaLeuAlaSerCysPheLe
                                                                                                                                                                                                                                                                                                                                      AlaTyrValTyrThrProGluValTyrProThrAlaThrArgAlaLeuGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The C.elegans Sequencing Consortium. 2 (bases 1 to 40699)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Caenorhabditis elegans.
Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 40699)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 40699 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Z11115
Z11115.1 GI:6953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: gb_in:CEZK637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Craxton, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 name=2K637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99069613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE
REMARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
```

CDS

```
94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . . ..
                                                                                                                                                                                                                                                                                                                                                                                                                            %30.00 (11124. .11557,11606. .11864,12073. .12282,12411. .12536)
gone="2x637.5"
/note="predicted using Genefinder
                                                                                                                                                                                         /translation="MKSNPKYFLMNDVERQSKYSPKYVPNNSLKERILEFLDYYIAPL KLYLLSYPMPDCLWDNRKLRLKASGVQVTPSSEPVHIDDRLIHISGKQPSE" join (11124 . 11557,11606 . 11864,12073 . 12282,12411 . 12536)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/protein_id="CAA77452.1"
/protein_id="CAA77452.1"
/protein_id="CAA77452.1"
/db_xref="SWISS-PROT:P30632"
/translation="MSDQLEASIRNILEQKTLKWIFVGGKGGVGKTTCSCSLAAQLSK
/translation="MSDQLEASIRNILEQKTLKWIFVGGKGGVGKTTCSCSLAAQLSK
MLONAAQUEGGSGGSMGKPELQSFAGGLFGIDEAMSFGEWIKLIDSLDFDVYVFDTA
PTGHTLRLLQFPTLLEKVFTKILSLQGMFGPMMNOFGGMFGMGGSMNEMIEKMTTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(join(16630. .16827,17583. .17732,17779. .17883,
17962. .18372,18848. .19006,19051. .19647,19694. .19826,
19876. .19994,20104. .20160))
/gene="zk637.7a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ESVKKMNAQFKDPNCTTFVCVCIAEFLSLYETERLIQELSKQGIDTHNIIVNQLLFPD
TDANGTVSCRKCASRQAIQSKYLTDIDELYEDFHVVKLPLLEAEVRGGPAILQFSERM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement(join(16630. .16827,17583. .17732,17779. .17883,
17962. .18372,18848. .19006,19051. .19653,19694. .19826,
19876. .19994,20104. .20160))
/gene="zK637.7b"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement(join(16630. 16827,17583. 17732,17779. 17883,
17962. 18372,1848. 19006,19051. 19647,19694. 19826,
19876. 19994,20104. 20160))
/gene="ZK637.7a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /yeue-__kno)./a

/note="predicted using Genefinder

CDNA EST yk3462.3 comes from this gene

CDNA EST yk2461.3 comes from this gene

CDNA EST yk12h1.3 comes from this gene

CDNA EST yk12h1.5 comes from this gene

CDNA EST yk32h6.5 comes from this gene

CDNA EST yk35h6.3 comes from this gene

CDNA EST yk35h6.5 comes from this gene

CDNA EST yk35h6.3 comes from this gene

CDNA EST yk270e5.5 comes from this gene

CDNA EST yk224d7.3 comes from this gene

CDNA EST yk224d7.3 comes from this gene

CDNA EST yk224d7.5 comes from this gene

CDNA EST yk220e8.5 comes from this gene

CDNA EST yk220e8.5 comes from this gene

CDNA EST yk220e8.5 comes from this gene

CDNA EST yk20e8.5 comes from this gene

CDNA EST yk20e8.5 comes from this gene

CDNA EST yk20e8.5 comes from this gene

CDNA EST yk3041.5 comes from this gene

CDNA EST yk3041.5 comes from this gene

CDNA EST yk56d3.3 comes from this gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NA EST Yk62f10.5 comes from this gene NA EST Yk62f10.3 comes from this gene NA EST Yk140f3.3 comes from this gene NA EST Yk140f3.5 comes from this gene NA EST Yk176c11.3 comes from this gene NA EST Yk176c11.5 comes from this gene NA EST Yk221f9.3 comes from this gene NA EST Yk221f9.5 comes from this gene NA EST Yk207c10.5 comes from this gene NA EST Yk207c10.5 comes from this gene NA EST Yk507c10.3 comes from this gene NA EST Yk191h10.5 comes from this gene NA EST Yk507c12.3 comes from this gene NA EST Yk507c12.5 comes from this gene
/note="predicted using Genefinder"
                                                                                                                                                                          /db_xref="SWISS-PROT:P30637"
                                                                                       /protein_id="CAA77451.1"
/db_xref="G1:3881666"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  homologue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arsa b
CDNA c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDNA I CD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           dene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                               gene
```

CDS

```
HRDTGSFFNNFSTDGERSAMMKGFKTYKNOTSEDVSTFMRANTKKLYNLLRYKKAROW VMCEFFYSALDEGIFKEENEFATIIRESFPNLKNNNITRLEWRSIRKLLGKFRRCSKV FFERENKYTEERRMKIRSVYEGSYLNDDSIDLKDLPAKLPRPWVGNRVFARIRNYD FTEERWYTTSTLYLNDDSIDLKDLFAKLDRANTSTFRYD GYSGLIDAY TRKGFRIFOKPDIPPTLVSGTEILLDGKLDLLSIAYFIEQANSKLPS GVRPFVAAVRDSSHPHLVRDVLVSRKIERSGGPLMGPNDERLNGKNAEMWGNFPLKFL
/protein_id="CAA77454.2"
/db_xref="G1:14530698"
/db_xref="G1:14530698"
/db_xref="GWISS-PROT:P30630"
/translation="MSSAVRSPRKAASDTSDPDRTSSPYSLRETSKVPSRYRNEELY
/translation="MSSAVRSPRKRAASDTSDPDRTSSPYSLRETSKVPSRYRNEELY
LSPSRSTRRTGSPRKRAASDTSDPDRTSSPYSLRETSKVPSRYRNEELY
LSPSRSTRRTGSPRKRAASDTSDPDRTSSPYNSLTRNSSLTMLAKAALDYESSSCALEY
IPKEERRPPRRALAKSPARPARSNDLLAKDLEWIEMMONLVGULDDLUNPANNTNEAVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1179 CGAGGGAGTTTTCAAAAAGAGTGTTCAATCCAAATGAGTTTTATATTAC 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1129 AAATATATTTCACAATTTGAATTGGAAAATTTGGAAATTTACCAAAATT 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1079 TAGATTGAAACTTTTGAAAATAAAAAAAAAAAATTTTAGAGCAGATTTCTG 1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1367 CATGTCGGAGATGATTTTGCAGTTCGATACTCAAACCTCGATGATCGTAC 1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .....AlaLeuLeuThrSerVa 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1029 TTGCATGACTGTAATGAAAACATTCAAAATTATTTTTAAAAATATCAAA 980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           979 AAAATAGTCACGGAAAAGCACCAGAAATTTTAAACACCTCAGAAAACAAT 930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAATCTTCAATATGTATTTAAAAAAAAATTTATTAACACACCTTTGCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        108 aProGlnLeuHisCysGluTrpArgLeuProSerTrpGln.Val.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54 aAlaValProLysGluPheAlaAsnProThrAspAsp......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42 HisValGly.....LeuGluAlaValGluLeuAspAspGlyAl
                                                                                                                                                                                                                                                                                                                                                                                                                                                             from: 1 to: 40699
                                                                                                                                                                                                                                                                                                  Length: 458
Gaps: 13
Percent Identity: 31.659
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1 to reverse of: CEZK637
                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-911-667A-2 x CEZK637/rev
                                                                                                                                                                                                                                                                                                     511.50
2.483
44.978
                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
                                                                                                                                                                                                                                                                                                            Quality:
                                                                                                                                                                                                                                                                                                                                 Ratio:
                                                                                                                                                                                                                                                                                         alignment_scores:
```

	AUTHORS Y.
145 spGlnTyrGlyArgLys150	JOURNAL P
::::: ::: 679 ATCGATTTGGTCGAGAAAAGTTAGTTGAAATATAAAATGTATAAATTGA 630	FEATURES Source
151	
	BASE COUNT ORIGIN
	alignment_sco
4 8	Percent Simi
193	alignment_blo US-09-911-66
193 er.ValThrLeuTyrAlaGluPheLeuProMetLysAlaArgAlaLysCy 209	Align seg 1/
::	90 Thro
209 slleLeuleulleGluValPheTrpAlaIleGlyThrValPheGluValV 226 :::::::	179148 TCAG
alieuAlaValpheValMetProSerLeuGlyTrpArgTrpLeuLeuIle	179198 CGTC
329 TTCTTGCTTATTTTGTGATGGATGTTGGTTGGAGGCTCTTATGTTC 280	. 123 laLe
243 LeuSerAlaValProLeuLeuPheAlaVal.LeuCysPhe 256 	179248 CCCT
	179298 GGCC
229 TATCAAAAAAATCGAGTTAGAAATTCAAAATGTCTGAATTGAAAGCTAG 180	156 rVa
257	179339 TGCC
179 TATGCAAGTATAGTATACAAGTAAAACTTCAAAAATGTTTCAGTGGGTCCC 130	170 laP
259 oGluserAlaArgTyrAspValLeuSerGlyAsnGlnGluLysAlaIleA 276 ::: ::: :::	179389 CAG
276 laThrLeuLySargllealaThrGluAsnGlyAlaProMetProLeuGly 292 ::	179439 CTGC 202 OME
293 LysLeuileileser 297 ::: ::: 29 AGATTAGTGTCTTCA 15	179489 ACG
seq_name: gb_pat:AX127153	179539 T
seq_documentation_block:	236
ON Sequence 7069 from Patent EP1108790. N AX127153 AX114121	
VERSION AX127153.1 GI:14041141 KEYWORDS .	
SOURCE Corynebacterium glutamicum. ORGANISM Corynebacterium glutamicum Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;	1/9039 CGC 267 eus
Actinomy cerates, cotymenacetimeae, cotymenacet	

```
/organism="Corynebacterium glutamicum"
/db_xref="taxon:1718"
/db_xref="taxon:1718"
/note="Seq 1 to long (3.309.400) split in 11, seq 7069
3.000.001 3.309.400 309.400"
70133 a 86477 c 83115 g 69675 t
Corynebacterium.

1 (bases 1 to 309400)

1 stagawa,S., Mizoguchi,H., Ando,S., Hayashi,M., Ochiai,K., Yokoi,H., Tateishi,N., Senoh,A., Ikeda,M. and Ozaki,A.
Novel polynucleotides
Patent: EP 1108790-A 7069 20-JUN-2001;
RYOWA HAKKO KOGYO CO., LTD. (JP)
Location/Qualifiers
1. 309400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGGCCTGACTCCCCGTTGCATCCATTTCTCC 179488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                etLysAlaArgAlaLysCysIleLeuLeuIleGluValPheTrpAlaI 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alLeuTrpThrLeuTyrTyrGlyIle.....LeuSerAlaPheA 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GlyThrValPheGluValValLeuAlaValPheValMetProSerLeu 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ....GlyTrpArgTrpLeuLeuIleLeuSerAlaValProLeuLeuLe 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   eGlyGly...ValProGlnSerValThrLeuTyrAlaGluPheLeuPr 202 :|||::: :::|||| :::||||| ||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SerGlyAsnGlnGluLysAla.......IleAlaThrLeuLysArg 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       euAlaProGlnLeuHisCysGluTrpArgLeuProSerTrpGlnValA 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pdlyAsnlleSerAspGlnTyrGlyArgLysThrGlyLeuLysIleSe 156
                                                                                                                                                                                                                                                                                                                                                                                                                                         rGlyLeuAlaTrpMetAlaAspAlaMetGluMetMetIleLeuSer11 106
                                                                                                                                                                                                                                                                                         Length: 480
Gaps: 14
Percent Identity: 27.708
                                                                                                                                                                                                                                                                                                                                                                                                          /1 to: AX127153 from: 1 to: 309400
                                                                                                                                                                                                                                                                                                                                                                                    :
                                                                                                                                                                                                                                                                                            Quality: 498.50
Ratio: 1.701
nilarity: 61.042
                                                                                                                                                                                                                                                                                                                                                                             67A-2 x AX127153
```

179689	AGAAAGGCCGGCACGACGAAGCAGAAGCCATCGTTGTTTCCTTCGAAGAA	179738
281		297
179739	TTCA	179788
297 179789	rargGlnGluAspargGlyLysMetArgAspLeuPheThrPrOHisPheA ::::::::::::::::::::::::::::::::::::	31 4 179835
314 179836	rgTrpThrThrLeuLeuLeuTrpPheIleTrpPheSerAsnAlaPheSer 	330 179885
331	TyrTyrGlyLeuValLeuLeuThrThrGluLeuPheGlnAlaGlyAspVa 	347 179935
347	1CysGlyIleSerSerArgLysLysAlaValGluAlaLysCysSerLeuA ::::: CACCCTCGTGAAGTCT	364 179951
364 179952	laCysGluTyrLeuSerGluGluAspTyrMeLAspLeuLeuTrpThrThr::::::	380 179975
381 179976	LeuSerGluPheProGlyValLeuValThrLeuTrplleIleAspArgLe :::: ::: ::: TGGCTCAGCTTCCAGGCTATGCGGTTGCAGGGTGGTTGAAAAGTG	397 180025
397 180026	uGlyArgLysLysThrMetAlaLeuCysPheValllePheSerPheCysS ::::: ::: GGGCCGTCGCAGCACATTGGCCACGTTCCTGGTTGGTTGTTGTATCT	414 180072
414	erLeuLeuLeuPheIleCysValGlyArgAsnValLeuThrLeuLeuLeu 	430
431	Phellealadrgalaphelleser	443 180163
443	aAlaTyrValTyrThrProGluValTyrProThrAlaThrArgAlaLeuG 	4 60 180213
460	lyLeuGlyThrCysSerGlyMetAlaArgValGlyAlaLeulleThrPro	476 180263
477	PhellealaGlnValMetLeuGluSerSerValTyrLeuThrLeuAl ::: ::: :::	492 180313
492	avalTyrSerGlyCysCysLeuLeuAlaAlaLeuAlaSerCysPheLeuP ::::::::::::::::::::::::::::::::::::	509 180363
509 180364	rolledluThrLysGlyGlyGlyLeuGlnGlu	519 180410
520	SerSerHisArgGluTrpGlyGlnGluMetValGlyArgGly.M ::::::: :::: :::: ::::	534 180460
53 4 180461	etHisGlyAlaGlyValThrArgSerAsnSerGlySer 546 ::::: rccaatTGCGGGGGGGTTGGCGATAACCGTGGCACC 180498	

```
3.3e-23
4.2e-23
4.2e-23
1.3e-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mutation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present sequence is a cDNA encoding human OCTIP (organic cation transporter-like protein), a member of the superfamily of sugar and other transporter molecules that have 12 transmembrane domains. The sequence is derived from a human foetal brain cDNA library. The protein is highly expressed in brain tissue and has nootropic, neuroprotective, neuroleptic, anticonvulsant, antiParkinsonian, antidepressant activities. The present sequence is used to requise a variety of cellular processes e.g. cell proliferation, differentiation and survival, screen OCTIP modulators and detect mutation neurodegenerative disorders (e.g. Alzheimer's, parkinson's, Huntington's and ALS), CNS disorders (e.g. schizophrenia, panic, depression), behavioural, sleep and eating disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; organic cation transporter-like protein; OCTlp; transporter; transmembrane; nootropic; neuroprotective; neuroleptic; anticonvulsant; antiParkinsonian; antidepressant; cellular process; cell proliferation; screen; treatment; prevention; diagnosis; neurodegenerative disorder; Parkinson's; Huntington; ALS; amyotrophic lateral sclerosis; CNS disorder; central nervous system; schizophrenia; depression; behavioural; sleep disorder; eating disorder; Alzheimer's; ss.
    551.65
559.69
559.69
550.82
540.95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New nucleic acid encoding human organic cation transporter-like protein, used for prevention, treatment and diagnosis of e.g. neurological, behavioural or sleep disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human organic cation transporter-like protein (OCTlp) cDNA.
    311.50
311.50
311.50
309.50
                                                                                                                                                                                                                                     seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AA249686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2562 BP; 520 A; 682 C; 749 G; 609 T; 2 other,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    548
0
                                                                                                                      + +
/SIDS2/gcgdata/geneseq/geneseqn/Na2000.DaT:AAC95402
/SIDS2/gcgdata/geneseq/geneseqn/Na2000.DAT:AAC95399
/SIDS2/gcgdata/geneseqn/na2000.DAT:AAC95400
/SIDS2/gcgdata/geneseq/geneseqn/Na2001.DAT:AAD12566
/SIDS2/gcgdata/geneseq/geneseqn/Na1099.DAT:AAD12566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
185..1831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product= "OCTlp"
                                                                                                                                                                                                                                                                                                                       seq_documentation_block:
ID AAZ49686 standard; cDNA; 2562 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 2; Fig 1; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (MILL-) MILLENNIUM PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98US-0107932.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Goodearl AJ, Glucksmann MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-US14880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Quality: 2846.00
Ratio: 5.193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-137069/12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P-PSDB; AAY44633.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200000633-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAZ49686;
                                                                                                                                                                                                                                                                                                                                                                        ......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              401

33094

14440

14440

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

11882

1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           349980
1197
1590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1821
2501
1950
2123
2493
2502
                                                                                                                                                                                                                                                                                      Command line parameters:
-MODEL-frame+p2n.model -DEV-x1p
-MODEL-frame+p2n.model -DEV-x1p
-04-Cqn02_1/USPTO_spool/US09911667/runat_07032002_130319_29572/app_query.fasta_1.615
-DB-N_Geneseq_1101 -QEMTE-fastap -SUFFIX=rng -GAPOP=12.000
-GAPEXT=4.000 -MINMATCH=0.100 -LOOPEXT=0.000
-GAPEXT=4.000 -MINMATCH=0.100 -LOOPEXT=0.500
-GAPOP=4.500 -GAREXT=7.000 -YGAPOP=10.000 -YGAPEXT=0.500
-FGAPOP=6.000 -DELEXT=7.000 -YTART=1 -MATRIX=blosum62
-TRANS-human40.cdi -LIST=45 -DOCALIGN=200 -TH_SCORE-pct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. 2e-292

3. 6e-83

1. 6e-83

1. 1e-42

1. 1e-42

1. 1e-42

1. 1e-42

1. 2e-35

5. 6e-41

1. 7e-35

2. 6e-81

1. 7e-35

2. 6e-81

1. 6e-32

2. 8e-33

3. 5e-33

3. 5e-33

1. 6e-32

1. 6e-29

2. 7e-29

2. 7e-29

2. 7e-29

2. 7e-29

2. 7e-29

3. 7e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 Documentation
6 + 2846 00 5389-21
2 + 846 00 5389-21
2 + 897 00 1123.63
4 + 498.50 856.21
0 + 443.50 1163.63
0 + 444.00 880.71
0 + 471.00 880.71
0 + 474.00 746.11
0 + 424.00 746.11
0 + 424.00 746.11
0 + 424.00 746.11
0 + 424.00 746.11
0 + 424.00 746.11
0 + 424.00 746.11
0 + 424.00 746.11
0 + 424.00 746.11
0 + 424.00 746.11
0 + 424.00 746.11
0 + 424.00 728.93
0 + 424.00 728.93
0 + 424.00 728.93
0 + 424.00 686.49
0 + 346.00 686.49
0 + 377.00 681.42
0 + 377.00 681.42
0 + 377.00 681.42
0 + 377.00 681.42
0 + 377.00 681.42
0 + 377.00 681.42
0 + 377.00 681.42
0 + 377.00 681.42
0 + 377.00 681.42
0 + 377.00 681.42
0 + 377.00 681.42
0 + 344.00 675.73
0 + 377.00 681.78
0 + 377.00 681.78
0 + 347.50 647.88
0 + 357.50 647.88
0 + 327.50 647.88
0 + 332.00 598.78
0 + 316.50 506.96
0 + 311.50 561.61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5399.21
1638.21
1123.63
856.21
911.44
910.62
880.71
817.50
776.11
774.59
743.58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       734 48
7729 35
7729 36
7729 36
7715 66
7715 66
7715 66
7715 66
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
7716 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  591.67
573.67
506.96
565.04
561.65
                                                                                                                                                                       About: Results were produced by the GenCore software, version 4.5, Copyright (c) 1993-2000 Compugen Ltd.
                        out_format
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Secore Litsu:

Sequence

SIDS2/gcgdata/geneseqn/NA2000.DAT:AA249686 + 28

SIDS2/gcgdata/geneseqn/NA2000.DAT:AA249689 + 8

SIDS2/gcgdata/geneseqn/NA2000.DAT:AA449689 + 8

SIDS2/gcgdata/geneseqn/NA2000.DAT:AA449689 + 8

SIDS2/gcgdata/geneseqn/NA2000.DAT:AA465314 + 4

SIDS2/gcgdata/geneseqn/NA2000.DAT:AA465314 + 4

SIDS2/gcgdata/geneseqn/NA2000.DAT:AA467949 + 8

SIDS2/gcgdata/geneseqn/NA2000.DAT:AA44679 + 4

SIDS2/gcgdata/geneseqn/NA2000.DAT:AA44679 + 4

SIDS2/gcgdata/geneseqn/NA2000.DAT:AA44679 + 4

SIDS2/gcgdata/geneseqn/NA199 B.DAT:AAV49559 + 4

SIDS2/gcgdata/geneseqn/NA2001.DAT:AAV49559 + 4

SIDS2/gcgdata/geneseqn/NA2001.DAT:AAV49559 + 4

SIDS2/gcgdata/geneseqn/NA2001.DAT:AAV4958 + 3

SIDS2/gcgdata/geneseqn/NA2001.DAT:AAV499 + 3

SIDS2/gcgdata/geneseqn/NA2001.DAT:AAV499 + 3

SIDS2/gcgdata/geneseqn/NA2000.DAT:AAV4098 + 3

SIDS2/gcgdata/geneseqn/Geneseqn/NA2000.DAT:AAV4098 + 3

SIDS2/gcgdata/geneseqn/Geneseqn/NA2001.DAT:AAV4098 + 3

SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAV4098 + 3

SIDS2/g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAF67950
/SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AAC95401
                    OM of: US-09-911-667A-2 to: N_Geneseg_1101:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database: N_Geneseq_1101:*
Database sequences: 930621
Database lenqth: 428662619
Search time (sec): 180.210000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Search information block:
Query: US-09-911-667A-2
Query length: 548
                                                                                                  Date: Mar 8, 2002 3:37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -WAIT -THREADS=1
```

```
985 GTCAGGGAACCAGGAAAAGGCAATCGCCACCTTAAAGAGGATAGCAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a x y x
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (\mathbf{x}_{i}, \mathbf{x}_{i}) = (\mathbf{x}_{i}, \mathbf{x}_{i}, \mathbf{x}_{i}) + (\mathbf{x}_{i}, \mathbf{x}_{i}, \mathbf{x}_{i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PheAlaValLeuCysPheTrpLeuProGluSerAlaArgTyrAspValLe 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   uSerGlyAsnGlnGluLysAlaIleAlaThrLeuLySArgIleAlaThrG 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      434
                                                                                                                                                                                                                                                                                                                                                                                                                            334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         384
                                                                                                                                                                                                                                  234
                                                                                                                                                                                                                                                                                                                               284
                                                                                                                                                                                                                                                                                                                                                                              20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84
                                                                                                                                                                                                                                                                                   34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCCATCGGGACAGTGTTCGAGGTCGTCCTGGCTGTGTTCGTGATGCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pAlaIleGlyThrValPheGluValValLeuAlaValPheValMetProS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ThrGlyLeuLysIleSerValLeuTrpThrLeuTyrTyrGlyIleLeuSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Identity: 100.
                       Percent
                                                                                                                                           from: 1
                    Percent Similarity: 100.000
                                                                                          AAZ49686
                                                                                                                                      AA249686
                                                                                                                                             to:
                                                                     alignment_block:
US-09-911-667A-2 x
                                                                                                                                             Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        201
                                                                                                                                                                                                                                                                                                                                                                                     34
                                                                                                                                                                                                                                                                                                                                                                                                                                 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84
```

```
1484
                                                                                                                                                            1534
                                                                                                                                                                                             1634
                                                                                                                                                                                                             1684
                                                                                                                                                                                                                      1784
                                                                                          1334
                                                                                                                            1434
                                         1184
                                                                                                                                                                             1584
                                                                                                           1384
                                                                                                                                                                                                      500
                                                         1234
                                                                          1284
                                                                                                   400
                                                                                                                   417
                                                                                                                                    434
                                                                                                                                                     450
                                                                                                                                                                    467
                                                                                                                                                                                     484
                                                                                                                                                                                                                                       534
                                                                  367
                                                                                  384
                317
                                                                                                                                                                                                                                                                       seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AAZ49689
                                                                                                                                                    AspArgGlyLysMetArgAspLeuPheThrProHisPheArgTrpThrTh
                    1785 TGCACGGTGCAGGTGTTACCAGGTCGAACTCTGGCTCTCAGGAA
                                                                                                                                                                                                                                                        etHisGlyAlaGlyValThrArgSerAsnSerGlySerGlnGlu
                                                                                                                                                                                                                                                                                     ВР
                                                                                                                                                                                                                                                                                     CDNA; 1906
                                                                                                                                                                                                                                                                                seq_documentation_block:
ID AAZ49689 standard;
                                                                                                                                                                                                                                                                                             AAZ49689
                                                                                                                                                                                                                                                        534
                                                                           1235
                                                                                                             1335
                                                                                                                             1385
                                                                                                                                              1435
                                                                                                                                                      434
                                                                                                                                                              1485
                                                                                                    384
                                                                                                                                      417
         1035
                                                                                                                     401
                          1085
                                           1135
 284
                  301
                                  317
                                                                   351
```

07-APR-2000

WO200000633-A1

Rattus sp.

29-JUN-1999; 30-JUN-1998;

06-JAN-2000

```
Human; mouse; chicken; rat; secreted expressed sequence tag; sEST;

Rexpressed sequence tag; EST; probe; chemokinetci; proliferative;

Immunomodulatory; haematopojetic; chemokinetic; analgesic; haemostatic;

Immunomodulatory; haematopojetic; chemokinetic; analgesic; haemostatic;

Immunomodulatory; haematopojetic; ontibacterial; antifungal;

Immunileer; osteopathic; neuroprotective; nootropic; antipsoriatic;

Immunileer; osteopathic; neuroprotective; nootropic; antipsoriatic;

Immunil dependent diabetes; asthma; myeloid cell deficiency; ulcer;

Impuboid cell deficiency; burn; osteoporosis; osteoarthritis;

Impuboid cell deficiency; burn; osteoporosis; osteoarthritis;

Immunilear; osteopering disorder; Alzheimer's disease; stroke;

Remour; infection; depression; psoriasis; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                469 ArgValGlyAlaLeuIleThrProPheIleAlaGlnValMetLeuGluSe 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 519 GluSerSerHisArgGluTrpGlyGlnGluMetValGlyArgGlyMetHi 535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AAA45312
   aPhelleSerGlyGlyPheGlnAlaAlaTyrValTyrThrProGluValT
                                                                                                                                                                                         452 yrProThrAlaThrArgAlaLeuGlyLeuGlyThrCysSerGlyMetAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Collins-Racie LA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human secreted expressed sequence tag SEQ ID NO:1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        535 sGlyAlaGlyValThrArgSerAsnSerGlySerGlnGlu 548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              McCoy JM, LaVallie ER,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bowman MR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_documentation_block:
ID AAA45312 standard; cDNA; 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0104436.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21-AUG-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (GEMY ) GENETICS INST INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Treacy M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200021991-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Merberg D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Jacobs K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAA45312;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PART OF A CONTRACT OF A CONTRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence is a partial cDNA encoding rat OCTLP (organic cation transporter-like protein) and derived from rat frontal cortex library. It was used to design primers to isolate OCTLP cDNA from human foctal brain cDNA library. Hand OCTLP is a member of the superfamily of sugar and other transporter molecules that have 12 transmembrane domains. It is highly expressed in brain tissue and has nootropic, neuroprotective, neuroleptic, anticonvulsant, antibarkinsonian, antidepressant activities. The OCT-like protein is used to regulate a variety of cellular processes e.g. cell proliferation, differentiation and survival, screen OCTLP modulators and detect mutation in OCTLP gene. OCTLP modulators can be used to treat or prevent chronic neurodegenerative disorders (e.g. Alzhelmer's, Parkinson's,
                                                                                                                 Human; organic cation transporter-like protein; OCTlp; transporter; transmembrane; nootropic; neuroprotective; neuroleptic; anticonvulsant; antiParkinsonian; antidepressant; cellular process; cell proliferation; screen; treatment; prevention; diagnosis; neurodegenerative disorder; Alzheimer; Parkinson's; Huntington; ALS; amyotrophic lateral sclerosis; CNS disorder; central nervous system; schizophrenia; depression; behavloural; sleep disorder; eating disorder; rat; ss.
                                                            Rat organic cation transporter-like protein (OCTLp) partial CDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New nucleic acid encoding human organic cation transporter-like protein, used for prevention, treatment and diagnosis of e.g. neurological, behavioural or sleep disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Huntington's and ALS), CNS disorders (e.g. schizophrenia, panic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    369 SerGluGluAspTyrMetAspLeuLeuTrpThrThrLeuSerGluPhePr 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            68 AGGTGTCCTTGTGACTCTGGGGTCATCGACCGCCTGGGCCGCAAGAAGA 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18 AGCAAAGAGATTACATGGACCTGTGTGGACCACCTGTCTGAGTTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        385 oG)yValLeuValThrLeuTrpIleIleAspArgLeuGlyArgLysT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1906 BP; 379 A; 547 C; 556 G; 424 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         depression), behavioural, sleep and eating disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length: 180
Gaps: 0
Percent Identity: 93.889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to: 1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Fig 4; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (MILL-) MILLENNIUM PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Goodearl AJ, Glucksmann MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98US-0107932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US14880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 876.00
4.949
98.333
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_block:
US-09-911-667A-2 x AAZ49689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Align seg 1/1 to: AAZ49689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-137069/12.
```

Quality: Ratio:

alignment_scores:

Percent Similarity:

517

ΰ Evans 518 nGluSerSerHisArgGlu 524

```
AAA AAA43426 to AAA45925 represent specifically claimed secreted expressed sequence tags (SESTs), isolated from human, mouse, chicken and rat clasues sources. The SESTs can have a range of activities depending on the tissues they were isolated from. The activities include: the tissues they were isolated from. The activities include: chemotactic; proliferative; immunomodulatory; haematopoietic; chemotacterial; antightogal; antiviral; antidiabetic; chemotacterial; antipartanonian; antiposorial antidiabetic; antipartanonian; antiposorial; crebroprotective; cotocopic; antipartanonian; antiposorial; crebroprotective; anticonvulsant; and antidepressant. The SESTs can be used for gene therapy and in vaccines. The SESTs are useful as probes for the identification and isolation of full-length cDNAs and genomic DNA molecules which correspond to the SESTs. Proteins encoded by the SESTs are useful in assays for determining biological activity and raising antibodies. They may be useful for treatment of autoimmune disorders (multiple sclerosis, insulin dependent diabetes), allergic conditions (stachmas), myeloid or lymphoid cell deficiencies, wounds, burns, ulcers, osteoporosis, osteopartritis, central nervous system disorders (stachmas), and sorders (stachman's, parkinson's, Huntington's disease, stroke), coaquiation disease), tumours, bacterial, fungal or viral infections, depression and psoriasis, the exemplification of the present invention.
                                                            Isolated polynucleotides, and encoded proteins, comprising secreted expressed sequence tags (sESTs), useful for treating various disorders such as autoimmune, infectious, and central nervous system disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              402 ThrMetAlaLeuCysPheValIlePheSerPheCysSerLeuLeuPh 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               418 elleCysValGlyArgAsnValLeuThrLeuLeuLeuLeuPhelleAlaArgA 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             435 laPheIleSerGlyGlyPheGlnAlaAlaTyrValTyrThrProGluVal 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    aArgValGlyAlaLeuIleThrProPheIleAlaGlnValMetLeuGluS 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           33 ACCATGGCCCTGTGCTTTGTCATCTTCTCTCTGCAGCCTCCTGCTGTT 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   233 AAGAGTGGGTGCTCTCATCACTCCGTTCATCGCCCAGGTGATGCTGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 401 BP; 69 A; 119 C; 104 G; 109 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Identity: 96.748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Align seg 1/1 to: AAA45312 from: 1 to: 401
                                                                                                                                                                                                 Claim 1; Page 679; 803pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  597.00
4.975
97.561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alignment_block:
US-09-911-667A-2 x AAA45312
WPI; 2000-317938/27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_scores:
Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      468
```

```
The present invention provides a number of nucleotide and protein sequences from the Coryneform bacterium Corynebacterium glutamicum. These are useful for identifying the mutation point of a gene derived from a mutant of coryneform bacterium, measuring expression amount and analysing the expression profile or expression pattern of a gene derived from coryneform bacterium, and identifying a homologue of a gene derived from coryneform bacterium, and identifying a homologue of a gene derived from coryneform bacterium. Coryneform bacteria are useful for producing amino acids, nucleic acids, vitamins, saccharides and organic acids, in the exemplification of the invention.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Novel polynucleotides derived from Coryneform bacteria, for identifying mutation point of a gene, measuring expression of a gene, analysing expression profile or pattern of a gene and identifying homologous gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yokoi
                                                                                                                                                                                                                                                             Coryneform bacterium; amino acid synthesis; vitamin; saccharide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 309400 BP; 70133 A; 86477 C; 83115 G; 69675 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Disclosure; SEQ ID NO: 7069; 246pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ochiai K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90 ThrGlyLeuAlaTrpMetAlaAspAlaMetGluMetMetIleLeuSerIl 106
                                     seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH68534
                                                                                                                                                                                                                       C glutamicum coding sequence fragment SEQ ID NO: 7069.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length: 480
Gaps: 14
Percent Identity: 27.708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mizoguchi H, Ando S, Hayashi M,
Senoh A, Ikeda M, Ozaki A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from: 1 to: 309400
                                                                                                  AAH68534 standard; DNA; 309400 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (KYOW ) KY ... A HAKKU KOGYO KK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16-DEC-1999; 99JP-0377484.
07-APR-2000; 2000JP-0159162.
03-AUG-2000; 2000JP-0280988.
                                                                                                                                                                                                                                                                                                                                                                                                                                        18-DEC-2000; 2000EP-0127688
383 GGAGTCCAAGCCACTCGAG 401
                                                                                                                                                                                                                                                                                 organic acid synthesis; ds.
                                                                                                                                                                                                                                                                                                                       Corynebacterium glutamicum
                                                                                                                                                                               26-SEP-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            498.50
1.701
61.042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Align seq 1/1 to: AAH68534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alignment_block:
US-09-911-667A-2 x AAH68534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           European Patent Office.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-376931/40.
                                                                               seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ratio
                                                                                                                                                                                                                                                                                                                                                           EP1108790-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nakagawa S,
Tateishi N,
                                                                                                                                                                                                                                                                                                                                                                                                  20-JUN-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_scores
                                                                                                                                            AAH68534;
```

79148	::: ::::: :::::: ::::::	179197	
106	eLeuAlaProGlnLeuHisCysGluTrpArgLeuProSerTrpGlnValA ::::	123 179247	
123 179248	laLeuLeuThrSerValValPheValGlyMetMetSerSerThrLeu::	139 179297	
140 179298	TrpGlyAsnIleSerAspGlnTyrGlyArgLysThrGlyLeuLysIleSe	156 179338	
156 179339	rValLeuTrpThrLeuTyrTyrGlyIleLeuSerAlaPheA :::	170 179388	
170	laproValTyrSerTrpIleLeuValLeuArgGlyLeuValGlyPheGly :: :::::::! :::	186 179438	
187 179439	11eGlyGlyvalProGlnSerValThrLeuTyrAlaGluPheLeuPr ::: :::::	202 179488	
202 179489	OMETLYSALAArgAlaLySCySILELeuLeuIleGluValPheTrpAlaI 	219 179538	
219	leGlyThrValPheGluValValLeuAlaValPheValMetProSerLeu:	235 179588	
236 179589	GATAATGCTTGGCGTTAGCTTTAGCTTTAGCTGTGCCTGTGCATTA	250 179638	
250 179639	uPheAlaValLeuCysPheTrpLeuProGluSerAlaArgTyrAspValL::::::::::::::::::::::::::::::::::::	267 179688	ĺ
267 179689	euSerGlyAsnGlnGluLysAlalleAlaThrLeuLysArg	280 :	S SI
281	IlealaThrGluAsnGlyAlaProMetProLeuGlyLySLeuIleIleSe	297	3 3 3 5 5
297 179789	rargGlnGluaspargGlyLysMetargaspLeuPheThrProHisPheA ::: :::! ::::: :::::::::: TGACAACGCTGCCGAGGGTTCCGTATCCATCTGGTCAGCTGCTTTGC	314	2022
314	rgTrpThrThrLeuLeuLeuTrpPhe1leTrpPheSerAsnAlaPheSer	330 . 179885 .	
331	TyrTyrGlyLeuValLeuLeuThrThrGluLeuPheGlnAlaGlyAspVa 	347 179935	
347 179936	ICysGlyIleSerSerArgLysLysAlaValGluAlaLysCysSerLeuA : : : : : CACCCTGTGAAGTCT	364 179951	
364 179952	laCysGluTyrLeuSerGluGluAspTyrMetAspLeuLeuTrpThrThr ::::	380 179975	2 2 2 2
381	LeuSerGluPheProGlyValLeuValThrLeuTrpIleIleAspArgLe	397	Z Z Z

Mizoguchi H, Ando S, Hayashi M, Ochiai K, Yokoi H; Senoh A, Ikeda M, Ozaki A; Coryneform bacterium; amino acid synthesis; vitamin; saccharide; organic acid synthesis; ds. 180364 CT...GAGCAGAAGGCTAAGTCTCCCTGGTTAGTGAGATCCTTCCACC 180410 180411 AGTTTTCACCTGCCCAACGATGGTGCGTTTCTGCGCCTGCCGGAAGTC 180460 179976 TIGGCICAGCITCCAGGCIAIGCGGITGCAGCGIGGTIGATIGAAAAGIG 180025 180073 CTGCAGCGCTCTAC.......GGCTTGGCAAATGTGGAGTGCCAGAFC 180113 180114 CIGGICGCAGGITGITIACIAICCTICITCAACCIGGGCGCATGGGGCGC 180163 180264 CTCATTGTCGCCAGTGATTGCTTTTGGTGACCAATTGCTTGTTCGC 180313 180314 TCTCTTTGCCACCGCGTTGCGATCGCAGTGATGCGGCGTTTACGCTGC 180363 477 PhelleAlaGlnValMetLeuGluSerSerValTyrLeuThrLeu...Al 492 509 rolleGluThrLysGlyGlyLeuGlnGlu.....519 431 PheileAlaArgAlaPheileSer......GlyGlyPheGlnAl 443 460 lyLeuGlyThrCysSerGlyMetAlaArgValGlyAlaLeuIleThrPro 476 397 uGlyArgLysLysThrMetAlaLeuCysPheValIlePheSerPheCysS 414 414 erLeuLeuPheIleCysValGlyArgAsnValLeuThrLeuLeuLeu 430 520SerSerHisArgGluTrpGlyGlnGluMetValGlyArgGly.M 534 eq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH68260 C glutamicum coding sequence fragment SEQ ID NO: 3295. 180461 TCCAAATTGCGGGCAGGTTCGCGATAACCGTGGCACC 180498 534 etHisGlyAlaGlyValThrArgSerAsnSerGlySer 546 eq_documentation_block:
AAH68260 standard; DNA; 1344 BP. (KYOW) KYOWA HAKKO KOGYO KK. 16-DEC-1999; 99JP-0377484. 07-APR-2000; 2000JP-0159162. 03-AUG-2000; 2000JP-0280988. 18-DEC-2000; 2000EP-0127688 Corynebacterium glutamicum. 26-SEP-2001 (first entry) EP1108790-A2. Nakagawa S, Tateishi N, 20-JUN-2001. AAH68260;

2001-376931/40.

The present invention provides a number of nucleotide and protein sequences from the Coryneform bacterium Corynebacterium glutamicum. These are useful for identifying the mutation point of a gene derived from a mutan. Of coryneform bacterium, massuring expression amount and analysing the expression profile or expression pattern of a gene derived from Coryneform bacterium, and identifying a homologue of a gene derived from coryneform bacterium. Coryneform bacterium coryneform securium coryneform bacteria are useful for producing amino acids, nucleic acids, vitamins, saccharides and organic acids, particularly L-lysine. The present sequence is a nucleic acid described in the exemplification of the invention.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from the European Patent Office. Novel polynucleotides derived from Coryneform bacteria, for identifying mutation point of a gene, measuring expression of a gene, analysing expression profile or pattern of a gene and identifying homologous gene Claim 8; SEQ ID NO: 3295; 246pp + Sequence Listing; English P-PSDB; AAG93041.

Sequence 1344 BP; 217 A; 359 C; 391 G; 377 T; 0 other; Length: 444 Gaps: 12 Percent Identity: 28.153 1.788 62.162 Quality: 493.50 Percent Similarity: Ratio: alignment_scores:

alignment_block: US-09-911-667A-2 x AAH68260

from: 1 to: 1344 Align seg 1/1 to: AAH68260

156 rValLeuTrpThrLeuTyrTyrGlyIle.....LeuSerAlaPheA 170 170 laproValTyrSerTrpIleLeuValLeuArgGlyLeuValGlyPheGly 186 CAGTGTCGCTGGCAATGTTGATGGCGCTGCGCTTCGTCGTTGGACTTGGC 390 150 CGTCATGGCTGCGTTGGCCACTCATTGGGGCCTATCCCCTACTGAAACTT 199 123 laLeuLeuThrSerValValPheValGlyMetMetSerSerSerThrLeu 139 106 eLeuAlaProGlnLeuHisCysGluTrpArgLeuProSerTrpGlnValA 123 90 ThrGlyLeuAlaTrpMetAlaAspAlaMetGluMetMetIleLeuSerIl 106 291 TGCGTTGTCTTTGCTAGTTTATGGCGTTGCCACTGGCGGCGTGTT CTGGGCGCTGAACTCCCCGTTGCATCCACTCTGATTTCCGAGTTTTCTCC OMETLYSAlaArgAlaLysCysIleLeuLeuIleGluValPheTrpAlaI 140 TrpGlyAsnileSerAspGlnTyrGlyArgLysThrGlyLeuLysIleSe 250 GGCGGTTTGCTGGCGGACAAGTTGGGGCGTCGA......CAAGTTTT IleGlyGly... ValProGlnSerValThrLeuTyrAlaGluPheLeuPr 341 441 187 391 156

seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAF67999

219 leGlyThrValPheGluValValLeuAlaValPheValMetProSerLeu

1266 TCTCTTTGCCACCGCGTTTGCGATCGCAGCGATTGCGGCGTTTACGCTGC 1315 460 443 977 414 430 476 492 aValTyrSerGlyCysCysLeuLeuAlaAlaLeuAlaSerCysPheLeuP 509 380 927 397 330 347 903 641 AGAAAGGCCGGCACGACGAAGCAGAAGCCATCGTTGCTTCGAAGAA 690 787 837 887 364 397 uGlyArgLysLysThrMetAlaLeuCysPheValllePheSerPheCysS LeuSerGluPheProGlyValLeuValThrLeuTrpIleIleAspArgLe erLeuLeuPheIleCysValGlyArgAsnValLeuThrLeuLeuLeu 443 aAlaTyrValTyrThrProGluValTyrProThrAlaThrArgAlaLeuG 460 lyLeuGlyThrCysSerGlyMetAlaArgValGlyAlaLeuIleThrPro 838 TACTACGGAGCCTTCATTTGGATTCCATCGCTGCTGGTTGCCGACGGTTT 347 lCysGlyIleSerSerArgLysLysAlaValGluAlaLysCysSerLeuA 364 laCysGluTyrLeuSerGluGluAspTyrMetAspLeuLeuTrpThrThrTTCCAATTCACTCTGATCATCACC 431 PhelleAlaArgAlaPhelleSer.....GlyGlyPheGlnAl 477 PhelleAlaGlnValMetLeuGluSerSerValTyrLeuThrLeu...AlGlyTrpArgTrpLeuLeuIleLeuSerAlaValProLeuLeuLe uPheAlaValLeuCysPheTrpLeuProGluSerAlaArgTyrAspValL euSerGlyAsnGlnGluLysAla.....lleAlaThrLeuLysArg 281 IleAlaThrGluAsnGlyAlaProMetProLeuGlyLysLeuIleIleSe 691 GCTGCCGCTGCCGAAGGTAAAGCTGCCGATGCCACCGCTGTGGTTCA rArgGlnGluAspArgGlyLysMetArgAspLeuPheThrProHisPheA ${\tt TyrTyrGlyLeuValLeuThrThrGluLeuPheGlnAlaGlyAspVa}$ 888 CACCCTCGTGAAGTCT........ 509 rolleGluThrLysGlyGlyGlyLeuGlnGlu 519 788 (381 928 414 331 904 297 250 267 314

.

```
alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    564
× 0 0 0 0 0 0 0 0 0 0 0 × 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Corynebacterium glutamicum nucleic acids encoding membrane construction and membrane transport proteins or their portions, useful for typing or identifying C. glutamicum or related bacteria, and as markers for transformation -
                                                                                                                                                                                                                                                                                        Corynebacterium glutamicum; brevibacterium lactof.vrmentum; MCT; membrane construction and membrane transport protein; petroleum spill; hydrocarbon degradation; gram positive aerobic bacterium; marker; identification; microorganism; fine chemical production; transformation; genome mapping; genetic engineering; ds.
                                                                                                                                                                                                                                 Corynebacterium glutamicum MCT protein encoding DNA SEQ ID NO:513.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Haberhauer G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zelder O,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 3; Page 878-880; 1119pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Schroeder H,
                                 seq_documentation_block:
ID AAF67999 standard; DNA; 1440 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99DE-1040765.
99DE-1040766.
99DE-1040830.
99DE-1040831.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99DE-1042078.
99DE-1042079.
99DE-1042088.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99DE-1032228.
99DE-1032229.
99DE-1032230.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99DE-1032124.
99DE-1032125.
99DE-1032128.
99DE-1032180.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99DE-1040833.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99DE-1041379.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99DE-1041395
99DE-1042077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99DE-1032182.
99DE-1032190.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99DE-1032212.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99DE-1033005.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99DE-1040764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99DE-1040832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99DE-1031478.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99DE-1032209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99DE-1032927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99DE-1032122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2000WO-IB00926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Corynebacterium glutamicum
                                                                                                                                                                                     11-APR-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pompejus M, Kroeger B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2001-071486/08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P-PSDB; AAB76766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽Ġ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200100805-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-JUN-1999;
08-JUL-1999;
08-JUL-1999;
09-JUL-1999;
09-JU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (BADI ) BASF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 U9-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27 - AUG-1999;
27 - AUG-1999;
27 - AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31-AUG-1999;
31-AUG-1999;
03-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       03-SEP-1999;
03-SEP-1999;
03-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-AUG-1999;
27-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27 - AUG-1999;
27 - AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      04-JAN-2001
                                                                                                                                 AAF67999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-JUL-1
```

```
construction and membrane transport (MCT) proteins given in AAB76510 to AAB76847. The MCT nucleic acids and proteins are useful in the characterization of microorganisms which can be used to produce the chemicals, for modulating fine chemical production in C. glutamicum or related bacteria (e.g. Brevibacterium lactofermentum), the typing or related bacteria, as reference points for mapping C. glutamicum genome, and as markers for transformation. AAF68082 and AAF68082 represent sequencing primers which are used in an
to AAF68080 encode the Corynebacterium glutamicum membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   euSerGlyAsnGlnGluLysAla......1leAlaThrLeuLysArg 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TrpGlyAsnIleSerAspGlnTyrGlyArgl,ysThrGlyLeuLysIleSe 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rValLeuTrpThrLeuTyrTyrGlyIle.....LeuSerAlaPheA 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OMetLysAlaArgAlaLysCysIleLeuLeuIleGluValPheTrpAlaI 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      90 ThrGlyLeuAlaTrpMetAlaAspAlaMetGluMetMetIleLeuSerIl 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGGCTGGATCATGGCTGCAATCGTCGGAACCTTTGTCGTGGCAGGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGGGGGCTGAACTCCCCGTTGCATCCCACTTTCCCAGTTTTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            514 ACGAAAAGTTCGTGGCCGCATGGTCGTTATCCTGGAGGCGTTTTGGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              219 leGlyThrValPheGluValValLeuAlaValPheValMetProSerLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .....GlyTrpArgTrpLeuLeuIleLeuSerAlaValProLeuLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  250 uPheAlaValLeuCysPheTrpLeuProGluSerAlaArgTyrAspValL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        664 CGCGGTGTATGTCCGTCTCCGGACTTCCAGAATCAGTACGTTTCCTGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       364 TGCGTTGTTTTGCTAGTTTATGGCGTTGCCACTGGCGCGTCGGCGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      170 laProValTyrSerTrp1leLeuValLeuArgGlyLeuValGlyPheGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           173 TCAGGTATCGCTGGCATTGGATGCCATGGATGTCGGACTGATCTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          106 eLeuAlaProGlnLeuHisCysGluTrpArgLeuProSerTrpGlnValA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            223 CGTCATGGCTGCGTTGGCCACTCATTGGGGCCTATCCCCTACTGAAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGTGTCGCTGGCAATGTTGATGCCGCTGCGCTTCGTCGTTGGACTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      187 IleGlyGly...ValProGlnSerValThrLeuTyrAlaGluPheLeuPr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 123 laLeuLeuThrSerValValPheValGlyMetMetSerSerThrLeu
                                                                                                                                                                                                                                                                                                                        Sequence 1440 BP; 235 A; 380 C; 415 G; 410 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Length: 444
Gaps: 12
Percent Identity: 28.153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to: 1440
                                                                                                                                                                                                                                                                         example from the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to: AAF67999 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quality: 493.50
Ratio: 1.788
nilarity: 62.162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-911-667A-2 x AAF67999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
```

```
. . . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; 5' EST; expressed sequence tag; secreted protein; diagnosis; gene therapy; chromosome mapping; upstream regulatory sequence;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1239 GAACGGGTGCTGCCGCGGGATTCGGGCGCATTGCTTCCATCATCGCTCCC 1288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11) ::: ::: ::: 118 CTGCAGCCTCTAC........GGCTTGGCAAATGTGGAAGTGGCAGATC 1138
                                                                                                                                                                                                                                                                          .....TTCCAATTCACTCTGATCACC 1000
                                                                                                                                                                                                                                                                                                                        477 PhellealaGlnValMetLeuGluSerSerValTyrLeuThrLeu...Al 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             aValTyrSerGlyCysCysLeuLeuAlaAlaLeuAlaSerCysPheLeuP 509
                                                                                                                                                                                                                                                                                                                                                         414
                                                                                                                                                                                                                                                                                                                                                                                                         430
                                                                                                                                                                                                                                                                                                                                                                                                                                                            443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          443 aAlaTyrValTyrThrProGluValTyrProThrAlaThrArgAlaLeuG 460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            460 lyLeuGlyThrCysSerGlyMetAlaArgValGlyAlaLeuIleThrPro 476
                                                                                                                                                                                                                                                                                                        397
                                                                                                                                                                                                     347 lCysGlyIleSerSerArgLysLysAlaValGluAlaLysCysSerLeuA 364
                         764 GCTGCCGCTGCCGAAGGTAAAGCTGCCGATGCCACCGCTGTGGTTCA 813
                                                  297 rArgGlnGluAspArgGlyLySMetArgAspLeuPheThrProHisPheA 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AAZ42410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human 5' EST isolated from a cDNA library SEQ 1D NO:169.
                                                                                                                                                                                                                                                      364 laCysGluTyrLeuSerGluGluAspTyrMetAspLeuLeuTrpThrThr
                                                                                                                                                                                                                                                                                                                                                                                                        erLeuLeuLeuPheIleCysValGlyArgAsnValLeuThrLeuLeuLeu
                                                                                                                  381 LeuSerGluPheProGlyValLeuValThrLeuTrpIleIleAspArgLe
                                                                                                                                                                                                                                                                                                                                                        397 uGlyArgLysLysThrMetAlaLeuCysPheValllePheSerPheCysS
                                                                                                                                                                                                                                                                                                                                                                                                                                                          431 PhelleAlaArgAlaPhelleSer.....GlyGlyPheGlnAl
                                                                                                                                                     331 TyrTyrGlyLeuValLeuLeuThrThrGluLeuPheGlnAlaGlyAspVa
                                                                                                                                                                     961 CACCCTCGTGAAGTCT.....
                                                                                                    314 rgTrpThrThrLeuLeuLeuTrpPheIleTrpPheSerAsnAlaPheSer
  281 IlealaThrGluAsnGlyAlaProMetProLeuGlyLysLeuIleIleSe
                                                                          814 TGACAACGCTGCCGAGGGTTCCGTA...TCCATCTGGTCAGCTGCTTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              509 rolleGluThrLysGlyGlyGlyLeuGlnGlu 519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_documentation_block:

ID AA242410 standard; CDNA; 480 BP
XX
AC AA242410;
XX
DT 01-FEB-2000 (first entry)
XX
DE Human 5' EST isolated from a CD
XX
XX
XX
KW Human; 5' EST; expressed sequen
KW gene therapy; chromosome mappin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1389
                                                                                                                                                                                                                                                                                                                                                                                                             414
                                                                                                                                                                                                                                                                                    977
```

```
AAX42265 to AAZ43075 represent novel 5' expressed sequence tag (EST)

Sequences, corresponding to human secr. ted proteins. AAY64651 to
CAAX45052. The 5' ESTS can be used for producing secreted human gene
CC AAX43052. The 5' ESTS can be used for producing secreted human gene
CC CAAX43052. The 5' ESTS can be used for producing secreted human gene
CC Coducts. They can be used to identify and isolate 5' untranslated
CC regions (UTRS) and upstream regulatory regions which control the
CC chromosome mapping, and to obtain full length cDNA clones. The ESTS can
CALCOMOSOME mapping, and to obtain full length cDNA clones. The ESTS can
CALCOMOSOME mapping, and to obtain full length cDNA clones. The ESTS can
CALCOMOSOME mapping, and to obtain full length cDNA clones. The ESTS can
CALCOMOSOME mapping, and to obtain full length cDNA clones. The ESTS can
CALCOMOSOME mapping. The identify individuals having genetic diseases
CC resulting from abnormal gene expression. The products may also be used in
CC gene therapy protocols. The nucleic acids encoding signal peptides
CC used for directing extracellular secretion of a polypeptide or the
CC into a cell. The proteins encoded by the EST sequences may be useful in
CC treating a variety of human conditions. Secreted proteins have
CC treating a variety of human conditions of new secreted proteins is
CC therapeutic value, and the identification of new secreted proteins is
CC sequences used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Novel secreted protein 5' expressed sequence tay sequences used in diagnostic, forensic, gene therapy, and chromosome mapping procedures
forensic; location; development; protein synthesis; stability; regulation; identification; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17 gArgThrGlyGluSerAlaArgSerGluAspAspThrAlaSerGlyGluH 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 480 BP; 102 A; 115 C; 154 G; 100 T; 9 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length: 103
Gaps: 0
Percent Identity: 95.146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Giordano J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to: 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 1; Page 265-266; 837pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Duclert A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Align seg 1/1 to: AAZ42410 from: 1
                                                                                                                                                                                                                                                                                                                                                         98US-0057719.
98US-0069047.
                                                                                                                                                                                                                                                                                             99WO-IB00712.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              471.00
4.710
97.087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-911-667A-2 x AAZ42410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dumas Milne Edwards J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-038446/03.
P-PSDB; AAY64796.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           GEST ) GENSET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
                                                                                                               Homo sapiens.
                                                                                                                                                                          W09953051-A2
                                                                                                                                                                                                                                                                                                    09-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                28-APR-1998;
                                                                                                                                                                                                                                  21-OCT-1999
                                                                                                                                                                                                                                                                                                                                                               09-APR-1998
```

51 AspAspGlyAlaAlaValProLysGluPheAlaAsnProThrAspAspTh 67

```
1000 TGAACAACGTGGTCACCATGGAAAGGGCGTTGCAAAGACCCTCATACTTA 1049
                                                                                                                                                                                                                                                                                                                                                                              103 leLeuSerIleLeuAlaProGlnLeuHisCysGluTrpArgLeuProSer 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                      TrpGlnValAlaLeu.....LeuThrSerVal...ValPheValGlyMe 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     euLeuPheAlaValLeuCysPheTrpLeuProGluSerAlaArgTyrAsp 265
                                                                                                                                                                                                                                                         ACTITGGGGACAGAGGTGTCCAACTCTGGGGAGCCTGAGGGTGAGCCCCT 376
                                                                                                                                                                                                                                                                                                                                             377 CACGGTGCCCTGCTCTCAGGGCTGGGAGTACGACCGCTCAGAA.....419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tMetSerSerThrLeuTrpGlyAsnIleSerAspGlnTyrGlyArgL 150
                                          189 caccarrerecersecessiscerreceasteresteasteactaster 238
                                                                                                                                                                                                                                                                                                          uSerValLeuThrGlyLeuAlaTrpMetAlaAspAlaMetGluMetMetI 103
                                                                                                                                                                                           277 GCTTTAGCTCCTGCCTCCGATTTGCCTATCCCCAGACTGTCCCCAATGTC 326
                                                                                                                                                                                                                                  98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTGGTGGTGGTGTGTGTGTTGTTGTCTGACAGGTTTGCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ysThrGlyLeuLys1leSerValLeuTrpThr1,euTyrTyrGly1leLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SerAlaPheAlaProValTyrSerTrpIleLeuValLeuArgGlyLeuVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    183 lGlyPheGlyIleGlyGlyValProGlnSerVal...ThrLeuTyrAlaG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        950 CAAGCTCAATGGGCGGCCCGTGGGTGAGGGCAGCCTGAGCCAGGAGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .......IlelleSerArgGlnGluAspArgGlyLysMetArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCGCCTTCTGCTCGTGGCCTACGTGAGCTCCCTGGTGCTGGTCTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                luPheLeuProMetLysAlaArgAlaIysCysIleLeuLeuIleGluVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PheTrpAlalleGlyThrValPheGluValValLeuAlaValPheValMe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        850 TCCCAGGCATCATCAGCATCTGGTGGGTTCCTGAGTCTGCACGGTGGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             266 ValLeuSerGlyAsnGlnGluLysAlaIleAlaThrLeuLysArgIleAl
                                                                               uAspAspG1yAlaAlaValProLysGluPheAlaAsnProThrAspAspT
                                                                                                             TTCTCCTCCACCATTGCAACTGAGTGGGATCTTGTGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HisGluValGlnIleGluGlyValHisValGlyLeuGluAlaValGluLe
                                                                                                                                                           67 hrPheMet.....val
                                                                                                                                                                                                                                  71 GluAspAlaValGluAlaIleGlyPheGlyLysPheGlnTrpLys...Le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       282 aThrGluAsnGlyAlaProMetProLeuGlyLySLeu.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          216
               34
                                                                                     20
                                                                                                                                                                                                                                                                        327
                                                                                                                                                                                                                                                                                                             98
                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     200
                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             transporter; liver; rat; dicarboxylic acid; prostaglandin; anti-inflammatory agent; anti-tumor; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This invention describes a novel rat liver-specific org. anion transporter OAT2 can transport various substances including dicarboxylic acids, prostaglandins, non-steroid anti-inflammatory agents and anti-tumor agents. This sequence encodes the rat liver anion transporter OAT2 protein described in the method of the invention.

    can transport various

                                                                                                                          84
                                                                                                                                                                                                                                                                          seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AA244679
                                                                          Rat liver anion transporter protein OAT2 encoding cDNA
                                                        rPheMetValGluAspAlaValGluAlaIleGlyPheGlyLySPheGlnT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 537 C; 571 G; 447 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         552
18
27.899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps:
Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to: 1901
                                                                                                                                                                                                                                                                                                               seq_documentation_block:
ID AA244679 standard; cDNA to mRNA; 1901 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            liver-specific org. anion transporter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                substances including dicarboxylic acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (KAGA-) KAGAKU GIJUTSU SHINKO JIGYODAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
51..1659
/*tag= a
/product= "OAT2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 4; Page 6-7; 13pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98JP-0169174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98JP-0169174
                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1901 BP; 346 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       446.50
1.493
54.167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to: AA244679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_block:
US-09-911-667A-2 x AAZ44679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-109694/10.
                                                                                                                                                                                                        MetMetIle 103
                                                                                                                                                                                                                                           465 ATGATGATC 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB; AAY51249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JP11346779-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             03-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                03-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                             14-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OAT2; anion
non-steroid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rattus sp
                                                                                                                                                                                                                                                                                                                                                                        AA244679
                                                                                                                                                                                                          101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Key
                       316
                                                          67
                                                                                               998
```

us-09-911-667a-2.rng

Rat OCT-1 gene.

```
1219 TGGTCTACTTCCTTGTGCGCCGTCTGGACGCCGTCTCACGAGGCTGGG 1268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1319 GGAGACTAAGTCATGGATCACTCCTCTGGTGGTGGTGGGGAAAGCTTTTT 1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1369 CTGAAGCTGCTTTTACTACGCCTACCTGTTCACGTCCGAGTTGTACCT 1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              487
                                                                                                                                                          339 hrGluLeuPheGlnAlaGlyAspValCysGlyIleSerSerArgLysLys 355
                                                                                                                                                                                                                                                                                                                                                                                              307 AspLeuPhe...ThrProHisPheArgTrpThrThrLeuLeuTeuTrpPh 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA1996.DAT:AAT08702
                                                                             322 elleTrpPheSerAsnAlaPheSerTyrTyrGlyLeuValLeuThrT::::|||||||:::|||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    470 lGlyAlaLeuIleThrProPheIleAlaGlnValMetLeuGluSerSerV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  :||||||| :::::|||||:: |||| ||| ||||| :::::||
1469 AGGGCCTCTCTGGCCCCCACTGGCGGCCCCCACTGGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      487 alTyrLeuThrLeu.....AlaValTyrSerGlyCysCysLeuLeuAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   502 AlaLeuAlaSerCysPheLeuProlleGluThrLysGlyGlyGlyLeuGl
                                                                                                                    1100 GGTGTGGTTTGGAGTGAACTTTTCCTACTACGGCCTGACTCTG.....
                                                                                                                                                                                                                                       356 AlaValGluAlaLysCysSerLeuAlaCysGluTyrLeuSerGluGluAs
                                                                                                                                                                                                                                                                                                               372 pTyrMetAspLeuLeuTrpThrThrLeuSerGluPheProGlyValLeuV
                                                                                                                                                                                                                                                                                                                                                         1169 GTACCAGACACAGCTGCTGTTTGGGGCTGTGGAGCTCCCCTCCAAAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420 sValGlyArgAsnValLeuThrLeuLeuLeuPheIleAlaArgAlaPheI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   437 leserGlyGlyPheGlnAlaAlaTyrValTyrThrProGluValTyrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              518 nGluSer.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1607 AGAGACCATCCAGGATGTGGAGGAGGAGGAGCTACCCAGGAGGAGGAGTGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           405 ...LeuCysPheValIlePheSerPheCysSerLeuLeuDheIleCy
                                                                                                                                                                              IIII IIII
GACGIGICTGGG......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_documentation_block:
ID AAT08702 standard; DNA; 1882 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10-SEP-1996 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1707 CAGAAG 1712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      527 GlnGlu 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAT08702;
                                                                                                                                                                                                   1143
                                                                                                                                                                                                                                                                              1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 X X X E X
```

```
Rat; OCT-1; transporter protein; cationic; xenobiotic; pharmaceutical; blood; liver; kidney; epithelial cell; intestine; tetraethylammonium; proximal renal tubule cell; intestine; enterocyte; transgenic; renal; billary; excretion; resorption; modulator; uptake; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This is the nucleotide sequence of the rat OCT-1 gene encoding a new transporter protein able to transport cationic xenobiotics and pharmaceuticals from the blood into liver or kidney epithelial cells or from the intestine. The gene was isolated by injecting a rat kidney gene library into Xenopus leavis oocyte and isolating clones conferring uptake of 14C-tetraehylammonium. One clone designated OCT-1 was isolated. Expression of the gene was detect in proximal renal tubule cells, in liver epithelial cell and in intestinal enterocytes. The DNA can be used to generate transgenic cells for use in in vitro test for renal/biliary excretion or intestinal resorption of xenobiotics and pharmaceuticals. The protein or cells expressing it can also be used to isolate modulators that block uptake of pharmaceutical by the renal tubules.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pharmaceuticals,
to assess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         119 SerTrpGlnValAlaLeuLeuThrSerValValPheValGlyMetMetSe 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             473 GCCTGGAAAGTGGACCTTTTTCAGTCCTGTGTGAACTTGGCTTCTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          152 lyLeuLysIleSerValLeuTrpThrLeuTyrTyrGlyIleLeuSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1882 BP; 382 A; 510 C; 523 G; 467 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Transporter protein for cationic xenobiotic(s) and pand related DNA and transformed cells - used e.g. excretion and resorption of cationic cpds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length: 441
Gaps: 14
Percent Identity: 29.478
                                                                                                                                                                                                                                                                                                                                                                                                           Koepsell
                                                                                                                                                 Location/Qualifiers
38..1708
/*tag* a
/product* rat OCT-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 1; Fig 2Al; 13pp; German.
                                                                                                                                                                                                                                                                                                                                                                                                         Gorboulev V, Gruendeman D,
                                                                                                                                                                                                                                                                                                        94DE-4424577
                                                                                                                                                                                                                                                                                                                                        94DE-4424577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      428.00
1.705
56.916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Align seg 1/1 to: AAT08702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_block:
US-09-911-667A-2 x AAT08702
                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1996-069422/08.
P-PSDB; AAR77676.
                                                                                                                                                                                                                                                                                                                                                                           (FARH ) HOECHST AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
                                                                                                                    rattus
                                                                                                                                                                                                                                                                                                                                          13-JUL-1994;
                                                                                                                                                                                                                                                                                                        13-JUL-1994;
                                                                                                                                                                                                                                      DE4424577-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alignment_scores
                                                                                                                    Rattus
```

us-09-911-667a-2.rng

ω.	rentant garar metredet of year contract of the	13
1378	3 CGTTACCCTCGCCTGTCTTGGCCGTA	13
32	20CysValGlyArgAsnValLeuThrLeuLeuLeuPheI	4
1332	11 SerPheCysSerLeuLeuLeuPhelle	12
2		
10	3 11C11C1C1C1CGGGGGGGGGGGGGGGGGGGGGGGGGG	٠ ،
395 1232	78 pThrThrLeuSerGluPheProGlyValLeuValThrLeuTrpllelleA ::::::::	3.
1182	TACCTGGACTTCTTTT	11
378	erLeuAlaCysGluTyrLeuSer	ĕ
1165		
361	5 lyAspValCysGlyIleSerSerA	ř
1138	4 TGTGCTGTACCAGGTCTCATCATG	
345	PheSerTyrTyrGlyLeuVal	3
1113	12 HisbheargTrpThrThrThrLeuLeuTrpPhelleirPrheleserashAl 	31
Ö	4 ATGCCTCAGAAAAGGGAAGTCCTTCGTTTGCCGACCTGTTCCG	101
311	ArgGlyLysMetArgThrPro	3(
1013	: 4 GAACGGGAAGGTGCCTCCTGCTGAAGATGCTCTTGAGGAGG	96
301	4 uAsnGlyAlaProMetProLeuGlyLysLeuIleIleSerArgGlnGluA	28
9	4 CAGAAGAGAACCACGCGAGCTGTCAGATAATGGAGCAATTGCACAGAAA	91
	4 TCCTCCTGTATTACTGGTTTGTCCCA6AAICCCCCCGGTGGTGTTGTTGTCC	
267	1 heAlaValLeuCysPheTrpLeuProGluSerAlaArgTyrAspValLeu 	
863	<pre>4 rLeuGlyTrpArgTrpLeuLeuLileLeuSerAlavalFloreuLeuLeur </pre>	23
		11
234	AlalleGlyThrValPheGluValValLeuAlaValPheValMetProSe	21
7	1 euProMetLySAlaArg4laLyS-ySiltecuteuliciteuriciteu	20
722	3 GGTCAGCAAGGGCAGCTGGGTGTCCGGCTATACCTTGATCACAGAGTTTG	67
0	SerValThrLeuTyrAlaGluPheL	18
672	GTGGCCCCGGACTATACATCCATGTTGCTTTTCGCCTGCTGCAGGGCAT	
185	rserTrpIleLeuValLeuArgGlyLeuValGlyPh	Ý

```
AAV49550-V49599 are cDNA sequences which encode human proteins containing a transmembrane domain. These proteins can be used for, e.g. research and nutrition, and may have cytokine and cell proliferation/differentiation, immune stimulating/suppressing, haematopoiesis regulating, tissue growth, activin/inhibin, elemotation/indiplessing, haematatic and thrombolytic, receptor/ligand, containing the second of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Transmembrane domain; human; nutrition; cytokine; cell proliferation; differentiation; immune system; stimulator; suppressor; regulator; heamatopoiesis; activin; inhibitor; chemotactic; chemokinetic; receptor; haemostatic; thrombolytic; ligand; anti-inflammatory; tumour; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human protein having transmembrane domain - useful for, e.g. research and nutrition
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1450 TGCCCTGTGTGACCTGGGTGGATCTTCACCCCTTCATGGTTCAGGC 1499
                                                                                                                                                                                                                                                             1500 TGATGGAAGTTTGGCAAGCCCTGCCCTCATTTGTTTGGGGTTTTGGGC 1549
                                                                                                                                                                                                                                                                                                                                      515 yGlyLeuGlnGluSer.....Ser.HisArgGluTrpGly.GlnGluMe 529
482 etLeuGluSerSerValTyrLeuThrLeuAlaValTyrSerGlyCysCys 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA1998.DAT:AAV49559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1662 BP; 312 A; 486 C; 466 G; 398 T; 0 other;
                                                                                                         rGlyMetAlaArgValGlyAlaLeuIleThrProPheIleAlaGlnValM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      anti-inflammatory or tumour inhibition activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sekine S, Yamaguchi T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_documentation_block:
ID AAV49559 standard; cDNA to mRNA; 1662 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human liver cell clone HP01293 cDNA #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 3; Page 120-121; 205pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (PROT-) PROTEGENE INC.
(SAGA ) SAGAMI CHEM RES CENTRE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1647 CAAAGGCCAAAGAAACAC 1665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97WO-JP04056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           96JP-0301429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        529 tValGlyArgGlyMetHis 535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-OCT-1998 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kato S, Kobayashi M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1998-297932/26.
P-PSDB; AAW64538.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07-NOV-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        W09821328-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-NOV-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22-MAY-1998.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAV49559;
                                                                                                                     465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .. . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . .
```

us-09-911-667a-2.rng

	Sim	
lignment US-09-91	block: 11-667a-2 x AaV49559	
Align s	eg 1/1 to: AAV49559 from: 1 to: 1662	
119	SerTrpGlnValAlaLeuLeuThrSerValValPheValGlyMetMetSe 135 :::::: ::: ::: TCCTGGAAGCTGGACCTCTTTCAGTCCTTTTGATGCGGGCTTCTTCTT 482	
135	rSerSerThrLeuTrpGlyAsnIleSerAspGlnTyrGlyArgLysThrG 152 ::: ::::: ::::	
152	1yLeuLysIleSerValLeuTrpThrLeuTyrTyrGlyIleLeuSerAla 168 ::: ::: GTCTCCTGGGAACTGGTCAACGGGGTGTCGGGCGTGCTCATGGCC 582	
169	PheAlaProValTyrSerTrpIleLeuValLeuArgGlyLeuValGlyPh 185 ::: ::: :::: :: TrcTcGcccaActaCarGcTcCTCTTCCGCTGCTGCAGGCCT 632	
185	eGly1leGlyGlyValProGlnSerValThrLeuTyrAlaGluPheL, 201 : ::: :: GGTCAGCAAGGGCAACTGGATGGCTAGCTACACCCTAATCACAGAATTTG 682	
201	euProMetLysalaArgAlaLysCysIleLeuLeuIleGluValPheTrp 217 :: :::! TrGGCTCGGGCTCCAGAAGAACGGTGGCGATCATGTACCAGATGGCCTTC 732	
218	AlailedlyThrValPheGluValValLeuAlaValPheValMetProSe 234 :::::: :::	
234	rLeuGlyTrpArgTrpLeuLeu1leLeuSerAlaValProLeuLeuLeuP 251 	
251 824	heAlaValLeuCysPheTrpLeuProGluSerAlaArgTyrAspValLeu 267 ::: ::: ::: ::: ::: TCCTGGTCTACTACTAGTGTGTGTGCGGAGTCCCCTCGGTGGCTGTTATCA 873	
268	SerGiyasnGinGluLysAlaIlealaThrLeuLysargIlealaThrGl 284 ::: ::::: ::: ::: :: :: CaaaaagaaAcacTGaaGcaaTaaaGaTaaTGGaCCACATGGJTGAAa 923	
284	uAsnGlyAlaProMetProLeuGlyLysLeulleIleSerArgGlnGluA 301 : ::::: ::: GAATGGGAAGTTGCCTCGTGTGTTTAAAGATGCTTTCCCTCGAAGAGG 973	
301 974	SPArgGlyLysMetArgAspLeuPheThrPro 311	
312	HisPheArgTrpThrThrLeuLeuLeuTrpPheIleTrpPheSerAsnal 328 :::::: ::::: ::::: CGCCTGAGGAACGCACTTCATCGTGATGTACCTGTGGTTCACGGACTC 1073	
328 1074	aPheSerTyrTyrGlyLeuValLeuLeuThrThrGluLeuPheGlnAlaG 345 :	
345	lyaspValCysGlyIleSerSerArgLysLysAlaVa	
362	LeuSerGluGluAspTyrMetAspLeuLeuT	

1120

```
1449 GCTGAGCTGTACCCCACATTCGTCAGGAACCTCGGAGTGATGGTGTFT 1498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1549 TGAGGGAGGTCTGGCAAGCCTTGCCCTCATTTTGTTTGCGGTGTTGGGC 1598
                                1063 ATGTCACCGAAAAGCTGAGCCCTTCATTTGCAGACCTGTTCCGCACGCCG 1112
                                                                                                                                                                                            1163 TGTGCTCTATCAGGGGCTCATCCTG......CACATGG 1194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1282 ACCGCGTGGGCCGCATCTACCCCATGGCCGTGTCAAATTTGTTGCCGGG 1331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      465 rGlyMetAlaArgValGlyAlaLeuIleThrProPheIleAlaGlnValM 482
                                                                                                                                                                                                                                                                                                                                                                                                                                           432 lealaargalaPheIleSerGlyGlyPheGlnAlaAlaTyrValTyrThr 448
                                                                                                                                                                                                                                                                                                                                     345 lyAspValCysGlyIleSerSerArgLysLysAlaValGluAlaLysCys 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH57556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              etLeuGluSerSerValTyrLeuThrLeuAlaValTyrSerGlyCysCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      378 pThrThrLeuSerGluPheProGlyValLeuVal" hrLeuTrpIlelleA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    spArgLeuGlyArgLysLysThrMetAlaLeuCysPheValllePhe...
    uAsnGlyAlaProMetProLeuGlyLysLeuIleIleSerArgGlnGluA
                                                                                      sp.....ArgGlyLysMetArgAspLeuPhe...ThrPro
                                                                                                                                                                                                                                                     328 apheSerTyrTyrGlyLeuValLeuLeuThrThrGluLeuPheGlnAlaG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1382 CATCATAATCATGTGTGGCCGAATGGGAATCACATTGCAATACAAT...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            449 ProGluValTyrProThrAlaThrArgAlaLeuGlyLeuGlyThrCysSe
                                                                                                                                                                         312 HisPheArgTrpThrThrLeuLeuLeuTrpPheIleTrpPheSerAsnAl
                                                                                                                                                                                                                                                                                                                                                                                                                        362 SerLeuAlaCysGluTyrLeuSerGluGluAspTyrMetAspLeuLr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SerPheCysSerLeuLeuLeuPheIle.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1646 CGCTTTGCCAGAGACC 1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAH57556 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         515 yGlyLeuGlnGluSer 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                   1195 GCGCCACCAGCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAH57556;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             395
                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DXXXE
                                                                                                                                                                                                                                                                  AAV49550-V49599 are cDNA sequences which encode human proteins containing
                                                                                                                                                                                                                                                                               a transmembrane domain. These proteins can be used for, e.g. research and nutrition, and may have cytokine and cell proliferation/differentiation, immune stimulating/suppressing, haematopoiesis regulating, tissue growth, activin/inhibin, chemotactic/chemokinetic, haemostatic and thrombolytic, receptor/ligand, anti-inflammatory or tumour inhibition activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     τ
1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   135 rSerSerThrLeuTrpGlyAsnIleSerAspGlnTyrGlyArgLysThrG 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            e...GlyIleGlyGlyValProGlnSerValThrLeuTyrAlaGluPheL 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTCAGCAAGGGCAACTGGATGGCTGGCTACACCCTAATCACAGAATTTG 771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     119 SerTrpGlnValAlaLeuLeuThrSerValValPheValGlyMetMetSe 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            522 recregaagergaaceretreagreergringaargeggerretr 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PheAlaProValTyrSerTrpIleLeuValLeuArgGlyLeuValGlyPh 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACGTGGGGCTGGTGGCCTTACCGGGCTGGCC...TACGCCCTGCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SerGlyAsnGlnGluLysAlaIleAlaThrLeuLysArgIleAlaThrGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     euProMetLysAlaArgAlaLysCysIleLeuLeuIleGluValPheTrp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGGCTCGGGCTCCAGAAGGAACGCTGGCGATCATGTACCAGATGGCCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AlalleGlyThrValPheGluValValLeuAlaValPheValMetProSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           heAlaValLeuCysPheTrpLeuProGluSerAlaArgTyrAspValLeu
                                                                                                                                                              - useful for,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   234 rLeuGlyTrpArgTrpLeuLeuIleLeuSerAlaValProLeuLeuP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             152 lyLeuLysIleSerValLeuTrpThrLeuTyrTyrGlyIleLeuSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             622 GTCTCCTGGGAACTGTGCTGGTCAACGCGGTGTCGGGCGTGTCATGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1888 BP; 365 A; 545 C; 520 G; 458 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    vaps: 11
Percent Identity: 29.858
                                                          Ë
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
                                                            Yamaguchi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to: 1888
                                                                                                                                                                Human protein having transmembrane domain research and nutrition
                                                                                                                                                                                                                           Claim 4; Page 141-143; 205pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from: 1
                                                            Sekine S,
                 SAGAMI CHEM RES CENTRE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 424.00
1.767
56.872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Align seg 1/1 to: AAV49558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alignment_block:
US-09-911-667A-2 x AAV49558
                                                              Kobayashi M,
PROTEGENE INC
                                                                                                      WPI: 1998-297932/26
                                                                                                                         P-PSDB; AAW64538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ouality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_scores:
    (PROT-) (SAGA)
                                                                 Kato S,
```

169 672 722

185

772 218 822

201

913

. .. . AAH57161 to AAH57576 represent cell and tissue specific polynucleotide sequences (I). (I) can have cytostatic, immunomodulatory and neuroprotective activities, and can be used in gene therapy. (I) and proteins (II) encoded by then are used in high throughput screening assays to select DNA molecules, RNA molecules, peptides, proteins, agonists, antagonists, antibodies or their fragments, immunoglobulins, inhibitors, drug compounds and pharmaceutical agents. Expression of (I) in a sample indicates the differentiation of embryonic stem cells into a tissue selected from tissues. (I) and (II) are used to produce an expression profile that defines a metabolic or developmental process, treatment, condition, disease or disorder. The gene profile can be used for diagnosis, or monitoring of treatments and for investigating a predisposition to a disorder where the gene is associated with a Human; tissue specific; diagnosis; brain; heart; skeletal muscle; lung; liver; uterus; ovary; stomach; intestine; kidney; pancteas; ss; metabolic disease; developmental disease; cytostatic; immunomodulatory; neuroprotective; gene therapy; cancer; immunopathology; neuropathology. New cell and tissue specific polynucleotides useful for diagnosis, prognosis or monitoring of treatments for disorders where the gene is associated with a cancer, immunopathology or new opathology. 710 GATCTATGAAGGGGAATATCAGGGCATTCCCCGGGCAGAGTCTGGGGGCA 759 760 AAGGCGAGCGGATGGCAGATGGGGCGCCCCTGGCTGGAGTAAGGGGGGGC 809 49 37 49 Sequence 4366 BP; 916 A; 1187 C; 1195 G; 1068 T; 0 other; 21 GluSerAlaArgSerGluAspAspThrAlaSerGlyGluHisGluValGl 37 nIle...GluGlyValHisValGlyLeuGluAlaValGlu..... 50 LeuAspAspGlyAlaAlaValPro..... Human brain cell specific cDNA sequence SEQ ID NO:396. Length: 710 Gaps: 22 Percent Identity: 22.254 to: 4366 cancer, immunopathology or neuropathology Seilhamer JJ, Watson GA; Claim 1; Page 309-310; 327pp; English. Align seg 1/1 to: AAH57556 from: 1 02-NOV-2000; 2000WO-US30396. 99US-0163508. (INCY-) INCYTE GENOMICS INC Quality: 413.00 Ratio: 1.237 Percent Similarity: 47.042 alignment_block: US-09-911-667A-2 x AAH57556 WPI; 2001-291057/30. WO200132927-A2. Homo sapiens. 04-NOV-1999; alignment_scores: Sornasse T, 10-MAY-2001 49

910	GAGIG	600
58	LysGluPheAlaAsnProThrAspAspThrPheMetV	7.1
860	GAAAGAACGAGAAGAACTGGCCCAACAGTAT	
71	luaspalavalglualaIJeClyPheGlyLysPheGlnTr :::::: 	87 941
942	ValLeuThrGlyLeuAlaTrpMetAlaAspAlaMetGluMetMetIleL. :::	104
	uSerIleLeuAlaProGinLeuHisCysGluTrpArgLeuPro	121
121	<pre>lnValAlaLeuLeuThrSerValValPheValGlyMetMetSerS :: ::::: :::: </pre>	137 1091
138	ThrLeuTrpGlyAsnIleSerAspGlnTyrGlyArgLysThrG 	154 1341
154	<pre>s1leSerValLeuTrpThrLeuTyrTyrGlyIleLeuSerAlaPheAla :: </pre>	171 1191
171	roValTyrSerTrplleLeuValLeuArgGlyLeuValGlyPh 	187 1241
188	GlyGlyValProGlnSerValThrLeuTyrAlaGluPheLeuProM :::	
203	tLysAlaArgAlaLysCysIleLeuLeuIleGluValPheTrpAl ::::	220 1341
220	LythrValPheGluValValLeuAlaValPheValMetPro 	236 1391
237	TGGAGTTTTCAGATGGGTTCTGCCTACCA	24
	uLeuIleLeuSerAlaValProLeuLeuLeuPheAlaValLeuCysP::::::::	25
257	rpLeuProGluSerAlaArgTyrAspVal :: :: CGCAGCCTGAGAGCCCCGGTTTCTTCCT7	273
274	AlaileAlaThrLeuLySArgileAlaTh ccrGGATGCTGAAGCAGGTCCATG	286 1591
286	yAlaProMetProLeuGlyl ::: :: ACATCCTGAGGGGGTGTTCTCAGTAACC	300 1641
300	luasparg	302 1691
303		306

692	TGGGGGGTCCGGGCCTTGAGCCTAGGGGGGGGGGGTTTGGGGGGAATTTTCT	1741
90	gaspLeuPheThrPrOHisPheArgTrpThrThrLeuLeuTrpPheI::	323
	CTGTTTTGGTCCCGAATATCGGCGCATCACTCTGATGATGGGT	٠ ،
0 0	letrppheSerAsnAlaPheSerTyrTyrGlyLeuValLeu	335 1841
2	TGTGGTTCACCATGTCAGCTACTATGGCCTGACCGTCTGGT	, 4
336		'n
842	GACATGATCCGCCATCTCCAGGCAGTGGACTACGCATCCCGCACCAAAGT	1891
337	Leurhrr	339
892	SCGCGTAGAGCATGTAACTTTTAACTTCACC	1941
339	hrGluLeuPheGlnAlaGlyAspValCysGlylleSerSer	352
1942	ATCAGATCCACCGAGGCGGCAGTACTTCAATGACAAGTTCATTGGGCTG	1991
353	ArgLysLysAlaValGluAlaLysCysSerLeu	363
1992	CGCTCAAGTCAGTGTCTTTGAGGATTCCCTGTTTGAAGAGTGTTATTT	2041
364	AlaCysGluTyrLeuS	369
2042	TGAGGATGTCACATCCAGCAACACGTTTTTCCGCAACTGCACATTCATCA	2091
369	erGluGluAspTyr	373
2002	:: ACACTGTGTTTTATAACACTGACCTGTTCGAGTACAAGTTTGTGAACAGC	2141
374	MetAs	375
2142	CGTCTGATAAACAGTACATTCCTGCACAACAAGAGGGGTGCCCGCTAGA	2191
375	preureurrpThrpreureurrpThr	379
2192	GAAGGTGCCTACAT	2241
38	ThrLeuSerGluPheProGlyValLeuValThrLeuTrpIleIle	394
.	Tedecate Court of the court of	` -
39	AspargLeuGlyArgLysThrMetAlaLeuCysPheVallePheSe	7336
2292	GACAAGATCGGCAGGCTCAGAATGCTTGCTGGCTCCAGCGTGATG	٠ i
411	rPheCysSerLeuLeuLeuPheIleCysValG1yArgAsnV	425 2385
425		441
2386	::::::: :::::::::::::::::::::::	2432
442		458
2433	:::	2482
458	aLeuGlyLeuGlyThrCysSerGlyMetAlaArgValGlyAlaLeuIlc.	474
2483		2532
475	ThrProPhelleAlaGlnVal	481
2533		25
482	<pre>:: wetLeuGluSerSerValTyrLeuThrLeuAlaValTyrSerGlyCysCy :::::: :::::: ::::::::::::::::::</pre>	498
2583		2632

```
The sequences given in AAC65819-24 encode human organic anion transporter (hOAT) polypeptides. hOAT polypeptides are preferentially expressed in the liver and kidneys of humans. OAT's are membrane proteins that facilitate the transport of organic anions across the cell membrane. The mechanism of transport is thought to be a secondary or tertiary active transport involving exchange of another organic anion. hoAT2A and hOAT2B are thought to be splice variants as they are identical except at the C-terminal end. hOAT proteins and the DNA encoding them, may be used in the prevention, treatment and diagnosis of diseases associated with inappropriate hOAT expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nucleic acids encoding human organic anion transporter polypeptides, useful in gene therapy procedures -
                                                                                                                                                                                                                                                                                                                                        Human; organic anion transporter; hOAT; liver; kidney; membrane protein; transport; organic anion; splice variant; ds.
515 lyGlyLeuGlnGluSerSerHisArgGluTrpGlyGlnGluMetValGly 531
                                                                                                                                                                             seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAC85822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2121 BP; 445 A; 680 C; 522 G; 474 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length: 556
Gaps: 17
Percent Identity: 23.741
                                                                                                                                        532 ArgGlyMetHisGlyAlaGlyValThrArg 541
                                                                                              2659 AGGTGCTGCAG........
                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
62..1690
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (META-) METABASIS THERAPEUTICS INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product= "hOAT3"
                                                                                                                                                                                                            seq_documentation_block:
ID AAC85822 standard; DNA; 2121 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1; Fig 4; 95pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12-JUL-2000; 2000MO-US18980.
                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ouality: 407.00
Ratio: 1.443
Percent Similarity: 50.719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2001-367057/38.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P-PSDB; AAB47274.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200104283-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alignment_scores:
                                                                                                                                                                                                                                                                                        06-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18-JAN-200!
                                                                                                                                                                                                                                                                                                                     hoat3 DNA.
                                                                                                                                                                                                                                                            AAC85822;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sun W;
```

	nmentation_block: N16697 standard; cDNA; 3580 BP.	seq_docume ID AAA1
26	: /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AAA166	sed_name
	CAGCCCTTGCCAGAGACT	5
	GlyG	515
514 1552	ysteuLeuAlaAlaLeuAlaSerCysPheLeuProIleGluThrLysGly:: ::: ::: :::	498
7	: ::::::::::::::::::::::::::::::::::::	S
498	lMetLeuGluSerSerValTyrLeuThrLeuAlaValTyrSerGly	481
481 1455	<pre>SerGlyMetAlaArgValGlyAlaLeuIleThrProPhelleAlaGlnVa ::: ::: > AACCTGTGGACCCGGGGAAGCATGGTCCCCCCTGGTGAAAAT</pre>	465
14	CAAGTGAATTATACCCCACAGTCATCAGGCAAACAGGTATGGGCG	
ف	hrProGluValTyrProThrAlaThrArgAlaLeuGlyLeuGlyThrCys	448
448 1358	ellealaargalaphelleSerGlyGlypheGlnalaalaTyrValTyrT :::::::::::::::::::::::::::::::::::	431
1308	DeubeurhetterysvaloryAlyasivalbeurm.beubeurgern 	1259
		1209
415	vsL	400
400 1208	uPheProGlyValLeuValThrLeuTrpI ::: :::: ::: CCAGCCAAGTTCATCACCATCCTCT	383
1162	:	1162
383	Tyr	367
1162		1162
366	leSerSerArgLysLysAlaValGluAlaLysCysSerLeuAlaCy	350
_	CAACCTCTACATCCTCCAGATCATCTTTGGTGGGGTCGATGTC	. 2
50		34
1119	ASIAAARIGSEETIYTIYTELTIYELEELEELEELITTIITIITIITIITIITIITIITIITIITIITIITIIT	327
		1
326 1069	hrProdisPheArgTrpThrTh ::: TACCCATGCGCCGCATGAC	310
1019	::: GGAGATCTCCTTGGCCAAGGCCAAGTACACCGCAAGTGACCTGTTCCG	910
310	uAsp	300
300	GluasnGlyAlaProMetProLeuGlyLysLeulleIleSerArgGlnGl :: ::: :::: ::::: :: GAAGAGGGAGAAAGGCTCAGCTTGGAGGAGCTCAAACTCAACTGCAGAA	284
· ~	INLYSALATIERIAINI EGULYSALYITERIAINI :: :: CGAAGGCCCTGAAGATACTCCGGGGGGGGGGTGCTTCAATGGCAAGAAG	870
283	hursalalleAlaThrLeuLvsArdIleAlaThr	7

```
Human secreted protein clone as180_1 nucleotide sequence SEQ ID NO:159.
  16-JUN-2000 (first entry)
AAA16697;
```

Human; secreted protein; immunestimulant; immunesuppressant; virucide; antibacterial; antifungal; cytostatic; antiinflammatory; dermatological; antidiabetic; antiarthrintic; antirheumatic; protozoacide; antidiabetic; antiarthrintic; antirheumatic; protozoacide; antithyroid; immune deficiency; severe combined immunedeficiency; SCID; infection; HIV; hepatitis; malaria; autoimmune disorder; systemic lupus; connective tissue disease; multiple sclerosis; erythematosis; frematoid arthritis; autoimmune pulmonary inflammation; asthma; duillain-Barre syndrome; autoimmune thyroiditis; myasthenia gravis; insulin dependent diabetes mellitus; graft-versus-host-disease; autoimmune inflammatory eye disease; allergy; SS.

Homo sapiens

WO200009552-A1.

24-FEB-2000

99WO-US18298 13-AUG-1999;

98US-0096622. 98US-0096815. 98US-0099229. 1998; 14-AUG-1998 17-AUG-1998 04-SEP-

98US-0105368. 99US-0115234. 99US-0119931. 99US-0120575. 0132020 99US-0096622 23-OCT-1998; 08-JAN-1999; 12-FEB-1999; 18-FEB-1999; 11-AUG-1999 30-APR-1999

(GEMY) GENETICS INST INC.

Collins-Racie LA, Evans C; Steininger RJ, Spaulding V; 4, LaVallie ER,
M, Agostino MJ,
Fechtel K; D, Treacy M McCoy JM, Jacobs K, Merberg D, Wong GG,

WPI; 2000-205979/18 P-PSDB; AAY94977 New polynucleotides encoding secreted proteins, which may have e.g. nutritional, chemokine, immune stimulating or suppressing, hematopoiesis regulating, tissue growth, activin/inhibin antiinflammatory or tumor inhibition activity

Claim 168; Page 613-614; 641pp; English

AAA16618 to AAA16697 encode the human secreted proteins given in AAY94898 to AAY9480, isolated from human adult brain, adult thyroid, adult retina, foetal carcinoma, adult blood, adult neural, foetal kidney, adult placenta, adult thereins, whole embryo, adult cartilage, kidney, adult placenta, adult thereins, adult turerus, adult turenus, foetal placenta, adult turerus, adult turenus, foetal placenta, adult turerus, adult turenus, for they.

Conditions in the polynucleotides and placenta and proteins are predicted to have biological activities which would make them suitable for treating, preventing or ameliorating medical conditions in humans and animals. The polynucleotides can be used as markers for tissues in which the protein is preferentially expressed, as molecular weight markers on Southern gels, and as chromosome markers or tags to identify chromosome sor to map gene positions. The proteins can be used in the treatment of immune deficiencies and disorders, such as severe combined infections include human immunodeficiency virus (HIV), hepatitis, herpesviruses, mycobacteria, Leismania spp., malaria and candidasis: The proteins and bused to treat autoimmune disorders such as connective tissue disease, multiple sclerosis, systemic lupus cythematosis, rheumatoid arthritis autoimmune pulmonary inflammation, diabetes mellitus, myasthenia gravis, graft-versus-host-disease and cutoimmune inflammatory eye disease. The proteins can also be used to

treat allergic conditions, such asthma. AAA16698 to AAA16774 represent probes for the human secreted proteins from the present invention. aProGlnLeuHisCysGluTrpArgLeuProSerTrpGlnValAlaLeuL 125 euThrSerValValPheValGlyMetMetSerSerSerThrLeuTrpGly 141 TAGGCCTCATCTTACCTGGGCATGATGGTGGGAGCCTTCCTCTGGGGA 696 142 AsnileSerAspGlnTyrGlyArgLysThrGlyLeuLysIleSerValLe 158 158 uTrpThrLeuTyrTyrGlyIleLeuSerAlaPheAlaProValTyrSerT 175 747 AGTCAACAGCGTCTTCTCTTCTCTTTTTTTTTCCAGGGTTACGGCA 796 rplleLeuValLeuArgGlyLeuValGlyPheGlyIleGlyGly...Val 190 797 CTTTCCTCTTCTGCCGCCTACTTTCTGGGGTTGGGATTGGAGGGTCCATC 846 ProGlnSerValThrLeuTyrAlaGluPheLeuProMetLySAlaArgAl 207 897 GGAGCATTTGAGCTGGCTCTGCATGTTTGGATGATTGGTGGCGTGTACG 946 224 luValValLeuAlaValPheValMetProSerLeuGly....... 236 LeuAlaTrpMetAlaAspAlaMetGluMetMetIleLeuSerIleLeuAl 108 465 AGAACTGGCCCAA......CAGTATGAAGCCATCCTAC 496 115 GAGGGTCCCCCTGGGGGGCCGGGGGGGGGCACCACGAAGGAACGAGA 464 330 TCCCCGGGCAGAGTCTGGGGGCAAAGGCGAGCGGATGGCAGATGGGGCGC 379 380 cccrcccrccacraaccccccc.....rrcacrcarccc 414 lualalleGlyPheGlyLysPheGlnTrpLysLeuSerValLeuThrGly 91 sGluPheAlaAsnProThrAspAspThrPheMetValGluAspAlaValG 75 37 InileGluGlyValHisValGlyLeuGluAlaValGluLeuAspAspGly 53 aLysCys11eLeuLeu11eGluVa1PheTrpAlaI1eGlyThrVa1PheG |||| :::::: |||||::
CCCATTGTCTTCTCGAGAACGAGG GGGAGTGTGCCACGGCCGCTTCCAGTGGACACTGTATTTTGTGCTTGGT 54 AlaAlaValPro.....l,y 597 GCCCAGCGCTGAGAAAGACATGTGCCTGTCCGACTCCAACAAAGGCATGC Sequence 3580 BP; 734 A; 942 C; 1024 G; 880 T; 0 other; 21 GluSerAlaArgSerGluAspAspThrAlaSerGlyGluHisGlu.... Length: 701 Gaps: 20 Percent Identity: 21.826 from: 1 1.256 407.00 alignment_block: US-09-911-667A-2 x AAA16697 Align seg 1/1 to: AAA16697 Quality: Ratio: Percent Similarity: alignment_scores 847 191 207 647 269 175 36 28 75 161 92 547 108 125 $SS \times S$

us-09-911-667a-2.rng

osteoclast transporter protein; osteoporosis; osteopetrosis; ds 2253 446 ValTyrThrProGluValTyrProThrAlaThrArgAlaLeuGlyLeuGl 462 | 111 | 111 | 111 | 111 | 111 | 112 | 112 | 112 | 112 | 113 | 114 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 2088 CTTCCTCAATGCCCTGTGTAAGCTGGCAGCTGTGCTGGGGATCAGCATCT 2137 2254TGAAGGGTCTCTAGGGTTTGGG 2283 1847 CAGTGCTTCCTGGGAATATCGTGTCTGCCCTGCTCATGGACAAGATCGGC 1896 445 524 luTrpGlyGlnGluMetValGlyArgGlyMetHisGlyAlaGlyValThr 540 474 491 LeuAlaValTyrSerGlyCysCysLeuLeuAlaAlaLeuAlaSerCysPh 507 507 eLeuProlleGluThrLysGlyGlyGlyLeuGlnGluSerSerHisArgG 524 Location/Qualifiers
100..1733
/*tag= a /product= "osteoclast transporter protein" seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA1997.DAT:AAV12391 399 ArgLysLysThrMetAlaLeuCysPheValIlePheSerPheCysSerLe 2230GAGACCCGGGGGCAGGTGCTGCAG....... 415 uLeuLeuPheIleCysValGlyArgAsn.....ValLeuThrLeuL 429 euLeuPhelleAlaArgAlaPhelleSerGlyGlyPheGlnAlaAlaTyr 475 .ThrProPhelleAlaGlnValMetLeuGluSerSerValTyrLeuThr 462 yThrCysSerGlyMetAlaArgValGlyAlaLeulle..... 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | Mouse osteoclast transporter protein encoding cDNA. (BGHM) BRIGHAM & WOMENS HOSPITAL seq_documentation_block:
ID AAV12391 standard; cDNA; 2102 BP. 97WO-US07856 96US-0647397 14-MAY-1998 (first entry) Beier DR, Brady KP; 09-MAY-1996; 09-MAY-1997; Mus musculus 2284 AGG 2286 409742321-A1 541 Arg 541 13-NOV-1997 AAV12391;

157 alLeuTrpThrLeuTyrTyrGlylleLeuSerAlapheAlaproValTyr 173 111 11 11 11 11 11 11 11	174 SerTrpIleLeuValLeuArgGlyLeuValGlyPheGlyIleGlyGlyVa 190 ::: ::::::::! :: ::	190 lProGlnSerValThrLeuTyrAlaGluPheLeuProMetLysAlaA 206 : : : : : : : : : : : : : : :	rgAlaLysCys1leLeuLeulleGluValPheTrpAla1leGlyThrVal	i 223 PheGluValValLeuAlaValPheValMetProSerLeuGly 236	237TrpArgTrpLeuLeuIleLeuSerAlaValProLeuLeuLeuP 251	251 heAlaValLeuCysPheTrpLeuProGluSerAlaArgTyrAspValLeu 267	268 SerGlyAsnGlnGluLysAlalleAlaThrLeuLysArgIleAlaThr 283	284GluasnGlyalaProMetProLeuGlyLysLeulleI 296	296 leSerArgGlnGluAsp	307 AspLeuPheThrProHisPheArgTrpThrThrLeuLeuLeuTrpPh 322	322 elleTrpPheSerAsnAlaPheSerTyrTyrGlyLeuValLeuLeuThrT 339 : : : : : : : : : : : : : : : : : :	339 hrGluLeuPheGlnAlaGlyAspValCysGlyIleSerSerArgLysLys 355	356 AlaValGluAlaLysCysSerLeuAlaCysGluTyrLeuSerGluGluAs 372 11::: 1185 1190	372 pTyrMetAspLeuLeuTrpThrThrLeuSerCluPheProGlyValLeuV 389 ::::::::::::::::::::::::::::::::::::	389 alThrLeuTrpIleIleAspArgLeuGlyArgLysLysThrMetAlaLeu 405 :: ::: ::: ::::::::::::	406 CysphevalllePheSerPheCysSerLeuLeuLeuPheIleCysVa 421 :::::::::::::::::::::::::::::::::::	421 1GlyArgAsnValLeuThrLeuLeuPheIleAlaArgAlaPheI 437
XX DR WPI; 1997-558983/51. DR P-PSDB; AAW44195.	XX Provel human and mouse osteoclast transporter proteins - useful for PT isolating agents that decrease osteoclast activity, for treatment of PT osteoporosis and osteopetrosis		CC Agents that bind the nucleic acid encoding the osteoclast transporter CC protein can be used to decrease its expression, thereby decreasing CC osteoclast activity. The agents can be used to treat osteoporosis CC and osteopetrosis.	XX SQ Sequence 2102 BP; 456 A; 645 C; 484 G; 517 T; 0 other;	alignment_scores: 401.00 Length: 582 Ouality: 401.00 Gaps: 22 Ratio: 1.298 Gaps: 22 Percent Similarity: 53.093 Percent Identity: 23.368	alignment_block: US-09-911-667A-2 x AAV12391	Align seg 1/1 to: AAV12391 from: 1 to: 2102 53 GlyAlaAlaValProLysGluPheAlaAsnProThrAspAspThr 67 11	GCACCAGTTTTTGGTTCATCTTGCTGGATGTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTGATGTTTGCTTGGTTGCTTGGTTGCTTGGTTGCTTGGTTGCTTGGTTGCTTGGTTGCTTGGTTGCTTGGTTGCTTGGTTGCTTGGTTGCTTGGTTGCTTGGTTGCTTGGTTGCTTGGTTGCTTGTTG	alGlualalleGlyPheGlyLysPheGlnTrpLysLeuSerValLeu: ::: ::: ::: :	ThrGlyLeuAlaTrpMetAlaAspAlaMetGluMetMetlleLe :::	uSerIleLeualaProGliLeuHisCysGlu			CTCCGCTTCGTCCATCTGCCAACGCCAGTCTTCCCAATGACACCCAGGG	389 GGCCACCGAGCCATGGTTGGATGGCTGGATCTACAACAGCACCAGAGACA 438 119SerTrpGlnValAla	LeuLeuThrSerValValPheValGlyMetMetSerSerSerSerThrLeuTr 	OGIASNIleSerAspolnTyrGlyArgLysThrGlyLeuLysIleSerV

437 leSerGlyGlyPheGlnAlaAlaTyrValTyrThrProGluValTyrPro 453

65 65 6556

```
TITLE OF INVENTION: Transport protein Which Effects The TITLE OF INVENTION: Transport Of Cationic Xenobiotics and or Pharmaceuticals, TITLE OF INVENTION: DNA Sequences Encoding It And Their Use. NUMBER OF SECUENCES: 6 CORRESPONDENCE ADDRESS:
                                                                     0.0069
                                                                                                                                        0.0010
                                                                                                                                           189.06
/cgn2_6/ptodata/2/ina/5A_COMB.seq:US-08-337-339-7 + 116.50 189
/cgn2_6/ptodata/2/ina/55A_COMB.seq:US-08-724-095-7 + 116.50 189
/cgn2_6/ptodata/2/ina/PcrUS_COMB.seq:Pcr-US95-14262-7 + 116.50
/cgn2_6/ptodata/2/ina/PcrUS_COMB.seq:Pcr-US95-14378-7 + 116.50
/cgn2_6/ptodata/2/ina/6A_COMB.seq:US-09-024-020B-7 + 116.50 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    135 rSerSerThrLeuTrpGlyAsnIleSerAspGlnTyrGlyArgLysThrG 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         152 lyLeuLysIleSerValLeuTrpThrLeuTyrTyrGlyIleLeuSerAla 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          119 SerTrpGlnValAlaLeuLeuThrSerValValPheValGlyMetMetSe 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               473 GCCTGGAAAGTGGACCTTTTTCAGTCCTGTGTGAACTTGGGCTTCTTCCT 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Finnegan, Henderson, Farabow, Garrett & Dunner
10 I Street, N.W., Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name: /cgn2_6/ptodata/2/ina/6A_COMB.seq:US-08-501-572-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps: 14
Percent Identity: 29.478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/501,572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           from: 1 to: 1882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02481.1453-00000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                         seq_documentation_block:
    Sequence 4, Application US/08501572
    Patent No. 6063623
                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Koepsell, Hermann
APPLICANT: Grundeman, Dirk
APPLICANT: Gorboulev, Valentin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1 to: US-08-501-572-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_block:
US-09-911-667A-2 x US-08-501-572-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 02
TELECOMMUNICATION INFURMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: Toohey, Kimberlin M
REGISTRATION NUMBER: 35,39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (202)408-4000
(202)408-4400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 1882 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ouality: 430.00
Ratio: 1.713
Percent Similarity: 56.916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIP: 20005-3315
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linea
                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1300 I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-501-572-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /cgn12_6/ptodata/2/ina/PcTUS_COMB.seq:PCT-US96-10986-4 - 138.00 235.42 16e-05 6170  
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:PCT-US96-10986-4 - 138.00 235.42 1.6e-05 6170  
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:PCT-US96-10986-3 - 138.00 235.96 1.7e-05 6387 1  
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:PCT-US96-10986-3 - 138.00 235.96 1.7e-05 6387 1  
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:PCT-US96-10986-3 - 138.00 235.96 1.7e-05 5380  
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:PCT-US96-10986-3 - 138.00 235.96 1.7e-05 5380  
/cgn2_6/ptodata/2/ina/AS_COMB.seq:US-08-882-704A-4 133.00 245.32 5.1e-06 1411 1  
/cgn2_6/ptodata/2/ina/AS_COMB.seq:US-07-925-695-3 + 129.00 221.04 0.0004 9589 1  
/cgn2_6/ptodata/2/ina/AS_COMB.seq:US-07-925-695-3 + 129.00 211.04 0.0004 9589 1  
/cgn2_6/ptodata/2/ina/AS_COMB.seq:US-08-964-127-3 + 127.00 231.60 3.0e-05 1490 1  
/cgn2_6/ptodata/2/ina/AS_COMB.seq:US-08-964-127-3 + 127.00 231.60 0.0004 9589 1  
/cgn2_6/ptodata/2/ina/AS_COMB.seq:US-08-964-11 + 119.50 1812.0 0.0192 19182 1  
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:US-08-964-11 + 119.50 1812.0 0.0192 19182 1  
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:US-08-964-11 + 119.50 1812.0 0.0192 19182 1  
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:US-08-964-11 + 119.50 1812.0 0.0192 19182 1  
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:PCTUS_US_08-10-11 + 110-10-11 + 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4411529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4403765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7198
1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3000
2343
2343
                                                                                                                                                                                                                                                                         5977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12. 1.1e-06
...3 1.2e-05 c/-
239.03 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .03 1.2e-05
1.6e-05 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      874.85 4.4e-41
874.85 4.4e-41
820.34 4.8e-38
347.79 1.0e-11
390.56 4.2e-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6.9e-06
1.1e-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                211.76 0
9 0.0060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0.0049
3.7e-08
5.7e-06
5.7e-06
3.8e-07
4.4e-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0.0005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1.50 244.52 5.76-10.00 265.55 3.88-10.00 264.53 4.48-10.00 244.53 6.98-10.00 243.03 6.98-10.00 259.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.03 1.18-10.00 239.00 239.00 239.00 239.00 239.00 239.00 239.00 239.00 239.00 239.00 239.00 239.00 239.00 239.00 239.00 239.00 239.00 239.00 239.00 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      190.29
190.22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               189.14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 236.42
                               out_format : pfs
                                                                                                                                                  About: Results were produced by the GenCore software, version 4.5, Copyright (c) 1993-2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                116.50
116.50
116.50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /cgn2_6/ptodata/2/ina/6A_COMB.seq:uS-09-024-020B-1 +
/cgn2_6/ptodata/2/ina/6A_COMB.seq:uS-09-024-020B-2 +
/cgn2_6/ptodata/2/ina/5A_COMB.seq:uS-08-338-702-7 +
                        OM of: US-09-911-667A-2 to: Issued_Patents_NA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database: Issued_Patents_NA:*
Database sequences: 351203
Database length: 1:8238999
Search time (sec): 89.480000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Search information block:
Query: US-09-911-667A-2
Query length: 548
                                                                                                                                                                                                                                                               Command line parameters:
                                                                                                 Date: Mar 8, 2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WAIT -THREADS=1
```

us-09-911-667a-2.rni

phealaprovalTyrSerTrp1 eLeuvalLeuArgGlyLeuvalGlyPh GTGGCCGGGCATA GTGGTGTGTGGTGTTGCTTGTGTGGGGGCTG eGly1 eQlyGlyVa ProGlnSerValThrLeuTyrAlaGlubheL	185 672	201 722	217 772	234 819	251 863	267 913	284 963	301 1013	311 1063	328 1113	345 1138	361 1165	378 1182	395 1232	410	419 1332	432	448 1399
99	69 PheAlaProValTyrSerTrpIleLeuValLeuArgGlyLeuValGlyPh 	85 eGlylleGlyGlyValProGlnSerValThrLeuTyrAlaGluPheL : :: ::: :: ::: 73 GGTCAGCAGCTGGGTGTCCGGCTATACCTTGATCACAGAGTTTG	01 euprometLysAlaArgAlaLysCysIleLeuLeuIleGluValPheTrp :: ::::: ::::: :::::	B AlaileGlyThrValPheGluValValLeuAlaValPheValMetProSe :::::	<pre>t rLeuGlyTrpArgTrpLeuLeulleuleLeuSerAlaValproLeuLeuLeuP : </pre>	healavalLeuCysPheTrpLeuProGluSerAlaArgTyrAspvalLeu	8 SerGlyasnGlnGluLysAlallealaThrLeuLysArglleAlaThrGl :::::::::: :: :::::::	4 4	01	12 HisPheArgTrpThrThr ::::: 64 AACCTGAGGAAGCACACC	B aPheSerTyrTyrGlyLeuValLeuLeuThrThrGluLeuPheGlnAl	45 lyaspvalCysGlyIleSerSerArgLysLysAlaValGluAlaLysCy ::: ::: ::: 39	62 SerLeuAlaCysGluTyrLeuSerGluGluAs	78	95 spargLeuGlyargLysLysThrMetAlaLeuCysPheValllePh :: 33 ACCGCATTGGCCGCATCTACCCAATAGCGGCCTCGAATCTGGTGACGG	411 SerPhec ::: 283 GCAGCCT	420	32 lealaArgAlaPheIleSerGlyGly

```
1500 TGATGGAAGTTTGGCAAGCCCTGCCCTCATTTTGTTTGGGGTTTTGGGC 1549
                                                                                                                                                 449 ProGluValTyrProThrAlaThrArgAlaLeuGlyLeuGlyThrCysSe 465
                                               465 rGlyMetAlaArgValGlyAlaLeuIleThrProPheIleAlaGlnValM 482
                                                                                                 482 etLeuGluSerSerValTyrLeuThrLeuAlaValTyrSerGlyCysCys 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/040,444
FILING DATE: MARCH 18, 1998
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      441
14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY AGENT INFORMATION:
NAME: 0'CONDOT, Steven P
REGISTRATION NUMBER: 41,25
REFERENCE/DOCKET NUMBER: 2481.1453-01
TELEPCOMUNICATION INFORMATION:
TELEPHONE: (202)408-400
TELEFAX: (202)408-400
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARRATERISTICS:
LENGTH: 1882 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TOPOLOGY: linear
; MOLECULE TYPE: DNA (genomic)
US-09-040-444-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quality: 430.00
Ratio: 1.713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
```

TITLE OF INVENTION: Transport protein Which Effects The TITLE OF INVENTION: Transport Of Cationic Xenobiotics and\or Pharmaceuticals, ITLE OF INVENTION: DNA Sequences Encoding It And Their Use. 1400 GCTGAGCTGTACCTACATCATCAGGAATCTTGGGATGATGGATTGCTC 1449 1500 TGATGGAAGTTTGGCAAGCCCTGCCCTCATTTTGTTTGGGGTTTTGGGC 1549 1183 TTCTTCTCTGGTGGAATTCCCCGGGGCCTTCATCATCTGGTCACCATTG 1232 233 ACGCATTGGCCGCATCTACCCAATAGCGGCCTCGAATCTGGTGACGGGG 1282 rGlyMetAlaArgValGlyAlaLeuIleThrProPheIleAlaGlnValM 482 $sp \\ Arg Leu G \\ 1 \\ Y \\ Arg Ly \\ SLy \\ ST \\ hr \\ Met \\ Ala Leu \\ Cy \\ S... \\ Phe \\ Val \\ I \\ le \\ Phe \\ 410$ ADDRESSEE: Finnegan, Henderson, Farabow, Garrett & Dunner STREET: 1300 I Street, N.W., Suite 700 515 yGlyLeuGlnGluSer.....Ser.HisArgGluTrpGly.GlnGluMe 482 etLeuGluSerSerValTyrLeuThrLeuAlaValTyrSerGlyCysCys LeuLeuAlaAlaLeuAlaSerCysPheLeuProIleGluThrLysGlyGl 449 ProGluValTyrProThrAlaThrArgAlaLeuGlyLeuGlyThrCysSe seq_name: /cgn2_6/ptodata/2/ina/6A_COMB.seq:US-08-501-572-6 432 leAlaArgAlaPheIleSerGlyGlyPheGlnAlaAlaTyrValTyrThr SYSTEM: PC-DOS/MS-DOS PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/501,572 Sequence 6, Application US/08501572 Patent No. 6063623 GENERAL INFORMATION:
APPLICANT: Koepsell, Hermann
APPLICANT: Grundeman, Dirk
APPLICANT: Gorboulev, Valentin 411 SerPheCysSerLeuLeuLeuPheIle. ZIP: 20005-3315
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPPRATING SYSTEM: PC-DOS/MS-1647 CAAAGGCCAAAGAAACAC 1665 529 tValGlyArgGlyMetHis 535 CLASSIFICATION: 424 ATTORNEY/AGENT INFORMATION: NAME: Toohey, Kimberlin NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS: CITY: Washington STATE: D.C. seq_documentation_block: FILING DATE COUNTRY: 499 465 1379

```
1050 CATTAAGCACATCGCAAAGAAAATGGAAAATCTCTACCCGCCTCCCTTC 1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1100 AGCGCCTGAGACTTGAAGAGGAAACTGGCAAGAAATTGAACCCTTCATTT 1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          eullelleSerArgGlnGluAspArgGlyLys.....Met 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         152 lyLeuLysIleSerValLeuTrpThrLeuTyrTyrGlyIleLeuSerAla 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                169 PheAlaProValTyrSerTrpIleLeuValLeuArg......GlyLe 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         196 euTyrAlaGluPheLeuProMetLysAlaArgAlaLysCysIleLeuLeu 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              906 GGTGGCTTACGCACTTCCTCAC.....TGGAGGTGGTTGCAGTTCACAG 949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           eralaValProLeuLeuLeuPheAlaValLeuCysPheTrpLeuProGlu 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     950 TTGCTCTGCCCAACTICTTCTTGCTCTATTACTGGTGCATACCTGAG 999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SerAlaArgTyrAspValLeuSerGlyAsnGlnGluLysAlaIleAlaTh 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        182 uVal.....GlyPheGlyIleGlyGlyValProGlnSerValThrL 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               119 SerTrpGlnValAlaLeuLeuThrSerValValPheValGlyMetMetSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         277 rLeuLysArgIleAlaThrGluAsnGlyAlaProMetProLeuGlyLysL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                213 IleGluValPheTrpAlaIleGlyThrValPheGluValValLeuAla..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               630 TGGCTCTATGAGTATCGGCTACATAGCAGACAGGTTTGGCCGTAAGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   135 rSerSerThrLeuTrpGlyAsnIleSerAspGlnTyrGlyArgLysThrG
                                                                                                                                                                                                                                                                                                                                                                                     Gaps: 14
Percent Identity: 29.371
REGISTRATION NUMBER: 35,391
REFERENCE/DOCKET NUMBER: 02481.1453-00000
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)408-4000
TELEFHONE: (202)408-4400
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 1896 base pairs
TYPE: nucleic acid
STAMDEDRESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to: US-08-501-572-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                      alignment_block:
US-09-911-667A-2 x US-08-501-572-6
                                                                                                                                                                                                                                                         DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                           426.00
1.760
56.410
                                                                                                                                                                                                                                                                                                                                           alignment_scores:
Quality:
                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
                                                                                                                                                                                                                                                ; MOLECULE TYPE:
US-08-501-572-6
                                                                                                                                                                                                                                                                                                                                                                                     Ratio:
```

```
Sequence 6, Application US/09040444

Patent No. 6063766

GENERAL INFORMATION:
APPLICANT: Koepsell, Hermann
APPLICANT: Grundeman, Dirk
APPLICANT: Groboulev, Valentin
TITLE OF INVENTION: Transport protein Which Effects The
TITLE OF INVENTION: Transport of Cationic Xenobiotics and\or Pharmaceuticals,
TITLE OF INVENTION: DNA Sequences Encoding It And Their Use.
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
ADDRESSEE: Finegan, Henderson, Farabow, Garrett & Dunner, L.L.P.
STREET: 1300 I Street, N.W., Suite 700
CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           :::111111
1369 GCATCAAATATGGTTGCAGGGGCAGCCTG1 . GCCTCAGTTTTATACC 1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1636 ATGGTTTTCGGCGTACTTGGCTTGGTTGCTGGAGGTCTGGTGCTGTTGCT 1685
                         1536 TCTTGGCGTCCACATCTTCCTCAATGTGTGACATTGGTGGCATCATCA 1585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              492 AlaValTyrSerGlyCysCysLeuLeuAlaAlaLeuAlaSerCysPheLe 508
                                                                                                                                           355 LysAlaValGluAlaLysCysSerLeuAlaCysGluTyrLeuSerGluGl
                                                                                                                                                                                                                                                                                                                                                                                                                            371 uAspTyrMetAspLeuLeuTrpThrThrLeuSerGluPheProGlyValL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        425 alLeuThrLeuLeuLeuPheIleAlaArgAlaPheIleSerGlyGlyPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1469 GGATCACAATG......GCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            442 GlnAlaAlaTyrValTyrThrProGluValTyrProThrAlaThrArgAl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                aLeuGlyLeuGlyThrCysSerGlyMetAlaArgValGlyAlaLeuIleT
|||||||::: :::||||
306 ArgAspLeuPhe...ThrProHisPheArgTrpThrThrLeuLeuTeuTr
                                                                                                                                                                                                                hrThrGluLeuPheGlnAlaGlyAspValCysGlyIleSerSerArgLys
                                                                                                                                                                                                                                                             .....CACATGGGCCTTGCAGGTGAC.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ......CysValGlyArgAsnV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          475 hrProPheIleAlaGlnValMetLeuGluSerSerValTyrLeuThrLeu
                                                                                                       321 pPhelleTrpPheSerAsnAlaPheSerTyrTyrGlyLeuValLeuT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          405 LeuCys...PheValllePheSerPheCysSerLeuLeuPhelle..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_name: /cgn2_6/ptodata/2/ina/6A_COMB.seq:US-09-040-444-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1686 TCCA...GAAACTAAAGGGAAAGCTTTGCCTGAGACC 1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   508 uProlleGluThrLysGlyGlyGlyLeuGlnGluSer 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                          1267
```

S

```
119 SerTrpGlnValAlaLeuLeuThrSerValValPheValGlyMetMetSe 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                580 TCCTGGATGTTGGACCTATTCCAGTCATCAGTGAATGTAGGATTCTTTAT 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           135 rSerSerThrLeuTrpGlyAsnIleSerAspGlnTyrGlyArgLysThrG 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          152 lyLeuLysIleSerValLeuTrpThrLeuTyrTyrGlyIleLeuSerAla 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          680 GCCTCCTAACTACAGTCCTCATAAATGCTGCAGCTGGAGTTCTCATGGCC 729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PheAlaProValTyrSerTrpIleLeuValLeuArg......GlyLe 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               182 uVal.....GlyPheGlyIleGlyGlyValProGlnSerValThrL 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    euTyrAlaGluPheLeuProMetLysAlaArgAlaLysCysIleLeuLeu 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   865 TACCAAGTIGCCTATACAGTIGGGCTC.....CTGGTGCTAGCTGG 905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  244 erAlaValProLeuLeuLeuPheAlaValLeuCysPheTrpLeuProGlu 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   213 IleGluValPheTrpAlaIleGlyThrValPheGluValValLeuAla.. :::!||| ::::||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ....ValPheValMetProSerLeuGlyTrpArgTrpLeuLeuIleLeuS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTGGCTTACGCACTTCCTCAC.....TGGAGGTGGTTGCAGTTCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGATTACAGAATTTGTTGGGGGGAGATATCGGAGAACAGTGGGGATTTTT
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Floppy disk
COMPUTER: Floppy disk
COMPUTER: PINEM: COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.30
CURRENT APPLICATION NUMBER: US/09/040,444
FILING DATE: March 18, 1998
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length: 429
Gaps: 14
Percent Identity: 29.371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Align seg 1/1 to: US-09-040-444-6 from: 1 to: 1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
NAME: O'Connor, Steven P
REGISTRATION NUMBER: 41,225
REFERENCE/DOCKET NUMBER: 2481.1453-01
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)408-4000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : (**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)**(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)***(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v**)**(**v*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_block:
US-09-911-667A-2 x US-09-040-444-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             426.00
1.760
56.410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   815
```

000 TCTCCCAGGTGGCTGATCTCCCAGAATAAGAATGCTGAAGCCATGAGAAT 1049 1050 CATTAAGCACATCGCAAAGAAAATGGAAAATCTCTACCCGCCTCCCTTC 1099 1100 AGCGCCTGAGACTTGAAGAGGAAACTGGCAAGAAATTGAACCCTTCATTT 1149 :::|||::: |469 GGATCACAATG......GCCTAT 1485 ::: ::: ::: ::: !III | III | III | III | III | III | III | IIII | III | 1636 ATGGTTTTCGGCGTACTTGGCTTGCTTGGAGGTCTGGTGCTGTTGCT 1685 405 LeuCys...PheValllePheSerPheCysSerLeuLeuLeuPhelle.. 419 294 eullelleSerArgGlnGluAspArgGlyLys.....Met 305 306 ArgAspLeuPhe...ThrProHisPheArgTrpThrThrLeuLeuTr 321 321 pPhelleTrpPheSerAsnAlaPheSerTyrTyrGlyLeuValLeuLeuT 338 338 hrThrGluLeuPheGlnAlaGlyAspValCysGlyIleSerSerArgLys 354 355 LysalaValGluAlaLysCysSerLeuAlaCysGluTyrLeuSerGluGl 371 371 uAspTyrMetAspLeuLeuTrpThrThrLeuSerGluPheProGlyVall 388 388 euValThrLeuTrpIleIleAspArgLeuGlyArgLysLysThrMetAla 404 425 alLeuThrLeuLeuLeuPhelleAlaArgAlaPhelleSerGlyGlyPhe 441 442 GlnAlaAlaTyrValTyrThrProGluValTyrProThrAlaThrArgAl 458 475 hrProPhelleAlaGlnValMetLeuGluSerSerValTyrLeuThrLeu 491 492 AlaValTyrSerGlyCysCysLeuLeuAlaAlaLeuAlaSerCysPheLe 508 SerAlaArgTyrAspValLeuSerGlyAsnGlnGluLysAlaIleAlaTh 277 950 TIGCICTGCCCAACTICTTCTTGCTCTATTACTGGTGCATACCTGAG 999CACATGGGCCTTGCAGGTGAC...... 277 rLeuLysArg11eAlaThrGluAsnGlyAlaProMetProLeuGlyLysL :::|||||| :::||||||| ::: 1200 GTACAACTGGTTCACGAGCTCTGTGCTCTACCAGGGCCTCATCATG.... aLeuGlyLeuGlyThrCysSerGlyMetAlaArgValGlyAlaLeuIleT seq_name: /cgn2_6/ptodata/2/ina/6A_COMB.seq:US-08-501-572-5 uProlleGluThrLysGlyGlyGlyLeuGlnGluSer 520 seq_documentation_block: 261 1246 458 1267 420 508

```
1096 CGCCTGAGGAAGCGCACCTTCATCCTGATGTACCTGTGGTTCACGGACTC 1145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1482 CCTGTGTGTGACATAGGTGGGATAATCACCCCTTCATAGTCTTCAGGCTGA 1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .....AACCTCTACCTGGATTTCCTTTA 1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           312 HisPheArgTrpThrThrLeuLeuLeuTrpPheIleTrpPheSerAsnAl 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   328 aPheSerTyrTyrGlyLeuValLeuLeuThrThrGluLeuPheGlnAlaG 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       345 lyAspvalCysGlyIleSerSerArgLysLysAlaValGluAlaLysCys 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              362 SerLeuAlaCysGluTyrLeuSerGluGluAspTyrMetAspLeuleuTr 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     378 pThrThrLeuSerGluPheProGlyValLeuValThrLeuTrpIleIleA 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     416 uLeuPhelleCysValGlyArgAsnValLeuThrLeuLeuLeuPhelleA 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            433 laArgAlaPhelleSerGlyGlyPheGlnAlaAlaTyrValTyrThrPro 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        466 yMetAlaArgValGlyAlaLeuIleThrProPheIleAlaGlnValMetL 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      450 GluValTyrProThrAlaThrArgAlaLeuGlyLeuGlyThrCysSerGl 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               483 euGluSerSerValTyrLeuThrLeuAlaValTyrSerGlyCysCysLeu 499
                                                                                                                                                                                                                                                                  heAlaValLeuCysPheTrpLeuProGluSerAlaArgTyrAspValLeu 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                284 uAsnGlyAlaProMetProLeuGlyLysLeuIleIleSerArgGlnGluA 301
201 euProMetLysAlaArgAlaLysCysIleLeuLeuIleGluValPheTrp
                                       755 TTGGCTCGGGCTCCAGAAGAACGGTGGCGATCATGTACCAGATGGCCTTC
                                                                                                                805 ACGGTGGGGGGGTTACCGGGCTGGCC...TACGCCCTGCTCA
                                                                                                                                                                           c.....rggcgcrgcrgcraccraccrccraccrccrccr
                                                                                                                                                                                                                                                                                                                                                                                     301 sp.....ArgGlyLysMetArgAspLeuPhe...ThrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1178 GCGCCACCAGCGGG......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   406 .....CysPheValllePheSerPheCysSerLeu.....Le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  896 TCCTGCTCTACTACTGGTGTGTGCCGGAGTCCCCTCGGTGGTTATCA
                                                                                                                                                                                                                                                                                                                                                           SerGlyAsnGlnGluLysAlaIleAlaThrLeuLysArglleAlaThrGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1146 TGTGCTCTATCAGGGGCTCATCCTG......CACATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   395 spargLeuGlyArgLysLysThrMetAlaLeu.........
                                                                                      218 AlaileGlyThrValPheGluValValLeuAlaValPheValMetProSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1192
                                                                                                                                                                                                                               852
                                                                                                                                                                                                                                                                                                                                                                268
                                                                    APPLICANT: Koepsell, Hermann
APPLICANT: Grundeman, Dirk
APPLICANT: Grundeman, Dirk
TITLE OF INVENTION: Transport protein Which Effects The
TITLE OF INVENTION: Transport of Cationic Xenobiotics and\or Pharmaceuticals,
TITLE OF INVENTION: DNA Sequences Encoding It And Their Use.
CORRESPONDENCE: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         152 lyLeuLysIleSerValLeuTrpThrLeuTyrTyrGlyIleLeuSerAla 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                169 PheAlaProValTyrSerTrpIleLeuValLeuArgGlyLeuValGlyPh 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     705 GGTCAGCAAGGCAACTGGATGGCTACACCCTAATCACAGAATTTG 754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               119 SerTrpGlnValAlaLeuLeuThrSerValValPheValGlyMetMetSe 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    135 rSerSerThrLeuTrpGlyAsnIleSerAspGlnTyrGlyArgLysThrG 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    e...GlylleGlyGlyValProGlnSerValThrLeuTyrAlaGluPheL 201
                                                                                                                                                                                                                                      ADDRESSEE: Finnegan, Henderson, Farabow, Garrett & Dunner
STREET: 1300 I Street, N.W., Sulte 700
CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps: 11
Percent Identity: 30.166
                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from: 1 to: 1885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             02481.1453-00000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/501,572
FILING DATE:
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: TOONEY, Kimberlin M
REGISTRATION NUMBER: 35,391
REFERENCE/DOCKET NUMBER: 02481.1453.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)408-4400
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
       Sequence 5, Application US/08501572 atent No. 6063623 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Align seg 1/1 to: US-08-501-572-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             : LENGTH: 1885 base pairs;
: TYPE: nucleic acid
: STRANDEDNESS: single
: TOPOLOGY: linear
: MOLECULE TYPE: DNA (genomic)
US-08-501-572-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alignment_block:
US-09-911-667A-2 x US-08-501-572-5
                                                                                                                                                                                                                                                                                                                                                                ZIP: 20005-3315
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Quality: 425.50
Ratio: 1.766
nilarity: 57.245
                                                                                                                                                                                                                                                                                CITY: Washington STATE: D C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_scores:
                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
```

```
1096 CGCCTGAGGAAGCGCACCTTCATCCTGATGTACCTGTGGTTCACGGACTC 1145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACCTCTACCTGGATTTCCTTTA 1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1146 TGTGCTCTATCAGGGGCTCATCCTG......CACATGG 1177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             aPheSerTyrTyrGlyLeuValLeuLeuThrThrGluLeuPheGlnAlaG 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   284 uAsnGlyAlaProMetProLeuGlyLysLeuIleIleSerArgGlnGluA 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     345 lyAspValCysGlyIleSerSerArgLysLysAlaValGluAlaLysCys 361
                                                                                                                                                                                   e...Gly11eGlyGlyValProGlnSerValThrLeuTyrAlaGluPheL 201
                                                                                                                                                                                                                                                           201 euProMetLysAlaArgAlaLysCysIleLeuLeuIleGluValPheTrp 217
                                                                                                                                                                                                                                                                                       895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            284
                                                                                                                                  555 TGGCTCTCTCGGTGTTGGCTACTTTGCAGACAGGTTTGGCCGTAAGCTGT 604
                                                                                                             PheAlaProValTyrSerTrplleLeuValLeuArgGlyLeuValGlyPh
                                                                                                                                                                                                                                                                                                                                                                                                            234 rLeuGlyTrpArgTrpLeuLeuIleLeuSerAlaValProLeuLeuP
                                                                                                                                                                                                                                                                                                                                                                                                                                   852 C.....TGGCGCTGCTGCTGCTGCTGCCTGCCCACCTTCCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      251 heAlaValLeuCysPheTrpLeuProGluSerAlaArgTyrAspValLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCTGCTCTACTACTGGTGTGCCCGGAGTCCCCTCGGTGGCTGTTATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301 sp.....ArgGlyLysMetArgAspLeuPhe...ThrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     312 HisPheArgTrpThrThrLeuLeuLeuTrpPheIleTrpPheSerAsnAl
                                                                                                                                                                                                                          705 GGTCAGCAAGGGCAACTGGATGGCTGGCTACACCCTAATCACAGAATTTG
                                                                                                                                                                                                                                                                                                                                      218 AlaileGlyThrValPheGluValValLeuAlaValPheValMetProSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SerGlyAsnGlnGluLysAlalleAlaThrLeuLysArgIleAlaThrGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              362 SerLeuAlaCysGluTyrLeuSerGluGluAspTyrMetAspLeuLeuTr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        378 pThrThrLeuSerGluPheProGlyValLeuValThrLeuTrpIleIleA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                spArgLeuGlyArgLysLysThrMetAlaLeu.........
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .....CysPheValIlePheSerPheCysSerLeu.....Le
                                                                152 lyLeuLysIleSerValLeuTrpThrLeuTyrTyrGlyIleLeuSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1192
                                                                                                                   169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      406
                                                                                                                                                                                         185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . . . . .
                                                                                                                                                                                                                                                                                                                      APPLICANT: Koepsell, Hermann
APPLICANT: Grundeman, Dirk
APPLICANT: Grundeman, Dirk
TITLE OF INVENTION: Transport protein Which Effects The
TITLE OF INVENTION: Transport Of Cationic Xenobiotics and\or Pharmaceuticals,
TITLE OF INVENTION: DNA Sequences Encoding It And Their Use.
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: Finnegan, Henderson, Farabow, Garrett & Dunner, I.I.P. STREET: 1300 I Street, N.W., Suite 700 CITY: Washington STATE: D.C. COUNTRY: USA
       119 SerTrpGlnValAlaLeuLeuThrSerValValPheValGlyMetMetSe 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LeuAlaAlaLeuAlaSerCysPheLeuProIleGluThrLysGlyGlyGl
                                                                                                                                                                                                            seq_name: /cgn2_6/ptodata/2/ina/6A_COMB.seq:US-09-040-444-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Identity: 30.166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDTUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATONIN Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/040,444
FILING DATE: March 18, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to: 1885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: O'CONDOR, Steven P
REGISTRATION NUMBER: 41,225
REFERENCE/DOCKET NUMBER: 2481.1453-01
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)408-4000
TELEFAX: (202)408-4400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from: 1
                                                                                                                                                                                                                                                               Sequence 5, Application US/09040444 Patent No. 6063766 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to: US-09-040-444-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_block:
US-09-911-667A-2 x US-09-040-444-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY: linear

MOLECULE TYPE: DNA (genomic)

US-09-040-444-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: (202)408-4400
INFORMATION FOR SEQ ID NO: 5:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 1885 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        425.50
1.766
57.245
                                                                                                                                                                           1629 TTTGCCAGAGACC 1641
                                                                                                                                      516 yLeuGlnGluSer 520
                                                                                                                                                                                                                                                  seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20005-3315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_scores
                                                                                                     1582
                                                                500
```

œ

US-08-647-397-1

```
1482 CCTGTGTGTGACATAGGTGGGATAATCACCCCTTCATGCTTCAGGCTGA 1531
                                                                                                                                                                                                                                                                                                                                                                                      1408 ......CAAATGATCTGCCTGGTGAATGCT 1431
                                                                                                                  1532 GGGAGGTCTGGCCTTGCCCTTGTTTTGTTTTGCGGTGTTGGGCCTG 1581
                                                                                                                                                                                                                                                                                                                                                              500 LeuAlaAlaLeuAlaSerCysPheLeuProIleGluThrLysGlyGlyGl 516
                                                                                                                                                                                466 yMetAlaArgValGlyAlaLeuIleThrProPheIleAlaGlnValMetL 483
                                                                                                                                                                                                                                                                        483 euGluSerSerValTyrLeuThrLeuAlaValTyrSerGlyCysCysLeu 499
433 laArgAlaPheIleSerGlyGlyPheGlnAlaAlaTyrValTyrThrPro 449
                                                                                          450 GluValTyrProfhrAlaThrArgAlaLeuGlyLeuGlyThrCysSerGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_name: /cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-647-397-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER:
COMPUTER: IEM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURENT APPLICATION DATA:
APPLICATION NUMBER: US/08/647,397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE: Wolf, Greenfield & Sacks, P.C. STREET: 600 Atlantic Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
APPLICANT: Beier, David R.
APPLICANT: Brady, Kevin P.
TITLE OF INVENTION: OSTEOCLAST TRANSPORTER
UMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B0801/7048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1, Application US/08647397
Patent No. 5972702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 424
ATORNEY/AGENT INFORMATION:
NAME: GALES. EGWART R.
REGISTRATION NUMBER: 31,616
REFERENCE/DOCKET NUMBER: B080
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617-720-2441
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 2102 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 internal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: CDS
LOCATION: 120..1733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1629 TTTGCCAGAGACC 1641
                                                                                                                                                                                                                                                                                                                                                                                                                                                       516 yLeuGlnGluSer 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: CDNA HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_documentation_block;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FRAGMENT TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HYPOTHETICAL:
ANTI-SENSE: N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       02210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STATE: MA
COUNTRY: U
```

289 TAGAGCCCTGGGTACTCCCCTTGGGCCCAAACGGGAAGCCTGAGAAGTGT 338 124 LeuLeuThrSerValValPheValGlyMetMetSerSerSerThrLeuTr 140 174 SerTrpIleLeuValLeuArgGlyLeuValGlyPheGlyIleGlyGlyVa 190 689 Trctctgagcaccartatctrgaargrggaargggracccacccccacgc 738 239 CACAGCCACCCTGACCACCACTGTCGCCCCCCCCAACGCCTCTC 288 339 CTCCGCTTCGTGCATCTGCCAAACGCCAGTCTTCCCAATGACACCCAGGG 388 389 GGCCACCGAGCCATGCTTGGATGGCTGGATCTACAACAGCACCAGAGACA 438SerTrpGlnValAla.....123 157 alLeuTrpThrLeuTyrTyrGlyIleLeuSerAlaPheAlaProValTyr 173 739 GGGCCATCTCATCAACAACTATTGGGTACTGCTACACCATTGGTCAA... 785 89 CCACCAGTTTTGGTTCATCTTGCCTGGTGCCATGACCTTCTCCGAGATTC 138 139 TGGACCGTGTTGGAAGCATGGCCCCTTCCAGTACCTGCATGTGACCTTG 188 90 ThrGlyLeuAlaTrpMetAlaAspAlaMetGlu.....MetMetIleLe 104 rgAlaLysCysIleLeuLeuIleGluValPheTrpAlaIleGlyThrVal 222 67 :::||| :::|||
189 CTGGCCCTCCCAATCCTGGAATAGCCAACCACCACATGTTGCTACAGATCTT 489 ATGGCACAGTCAGTCTTCATGGCAGGTATACTGGTTGGAGGACCTGTGTT 111:::||||:::|||39 GGCACGGCAACTGCTGCTGCCAACTCCAACTCCAACTCCAACTCCAA 74 alGluAlaIleGly...PheGlyLysPheGlnTrpLysLeuSerValLeu 104 uSerIleLeuAlaProGlnLeuHisCysGlu..... 118 589 ATCTCTTGCTGGCAGCCAGTGCTCCAGTGCTTCAGCCCCAGCCTC 190 lProGlnSer...ValThrLeuTyrAlaGluPheLeuProMetLysAlaA 53 GlyalaAlaValProLysGluPheAlaAsnProThrAspAspThr....TrpArgLeuPro..... Length: 582 Gaps: 22 Percent Identity: 23.368 Align seg 1/1 to: US-08-647-397-1 from: 1 to: 2102 US-09-911-667A-2 x US-08-647-397-1 401.00 1.298 53.093 alignment_scores: Quality: Percent Similarity: Ratio: alignment_block: 115 119 639 89 118

236 814	251 864	267 914	283 964	296 1014	306 1064	322	339 1164	355 1184	372 1190	38	405	421 1333	437	453 1433	470	482 1533	498	515
Ph.	TrpArgTrpLeuLeullel6 ccrcAGTGGCGCTGCTACAGTTGT	healaValLeuCysPheTrpLeuProGluSerAlaArgTyrAspValLeu ::::: ::: :::	SerGlyAsnGlnGluLySAlaIleAlaThrLeuLysArgIleAlaThr ::: ::::: ::: TCTGGAAAATTCTCACGAGCTCTGAAGACACTCCAACGTGGCTACCTT	CAACGGCAAGAAGGAGG	leSerargGlnGluAspargGlyLysMetarg	AspLeuPheT GACTTGTTCCGAG	elleTrpPheSerAsnAlaPheSerTyrTyrGlyLeuValLeuThrT:	hrGluLeuPheGl ::: AAGAATTT	AlaValGluAlaLysCysSerLeuAlaCysGluTyrLeuSerGluGlu	PTyrMetAspLeuLeuTrpThrThrLeuSerGluPheProGlyValLeuV ::::::::::::::::::::::::::::::::::::	alT :: TCA	CysPheV: lllePheSerPheCysSerLeuLeuLeuPhelleCysVa ::::::::::::::::::::::::::::::::::::	IGlyArgAsnValLeuThrLeuLeuLeuPhelleAlaArgAlaPhel 	leSerGlyGlyPheGlnAlaAlaTyrValTyrThrProGluValTyrPro ::	ThralaThrargalaLeuGlyLeuGlyThrCysSerGlyMetalaArgva :::	GlyalaLeuIleThrProPheIleAlaGlnValM 	etLeuGluSerSerValTyrLeuThrLeuAlaValTyrSerGlyCysCys	LeuLeuAlaAlaLeuAlaSerCysPheLeuProIleGluThrLysGlyG
223	237	251 865	268	284	296	307	322	339	356 1185	37	389	406	421	437	454	470	482	499

```
APPLICANT: WHITE, OWER R.
APPLICANT: FRASER, Claire M.
APPLICANT: FRASER, Claire M.
APPLICANT: VENTER, JOHN C.
TITLE OF INVENTION: TUBERCULOSIS
FILE REFERENCE: 24366-220007,00
CURRENT APPLICATION NUMBER: US/09/103,840A
CURRENT FILING DATE: 1998-06-24
NUMBER OF SEQ ID NOS: 2
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 1
LENGTH: 4411529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3717266GTCGGCGTCCTCTACGGGTACGACCTTTCCGCCATCGCGGTGCGTTGCT 3717315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3717495CCTCGGTGCCGTACCGATGCTGGTGGTGGCGCGTCTGCTGCTGGTGTG 3717544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3717345CTCGAGAACAGGAGTTGCTGACCACCACGAGGGGGGGGGCGGCGAACGCC 3717394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3717445GGTGGTGCTCATCGTCGCCGGCTACGCAGTGTTCGCCCTGCTCGGCGCA 3717494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .....AGTGCCTGCCTTCTTTCTGAGACCCTCAATCG 1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                102 tileLeuSerileLeuAlaProGlnLeuHisCysGluTrpArgLeuProS 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             119 erTrpGlnValAlaLeuLeuThrSerValValPheValGlyMetMetSer 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     169 heAlaProValTyrSerTrplleLeuValLeuArgGlyLeuValGlyPhe 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                86 LeuSerValLeuThrGlyLeuAlaTrpMetAlaAspAlaMetGluMetMe 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          152 yLeuLysIleSerValLeuTrpThrLeuTyrTyrGlyIleLeuSerAlaP 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     186 GlyIleGlyGlyValProGlnSerValThrLeuTyr...AlaGluPheLe 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     201 uProMetLysAlaArgAlaLysCysIleLeuLeuIleGluValPheTrpA 218
                                                                                                     1613 GCCCTTACCAGAAACTATCGAGGACATACAAGACTGGTACCAGCAA 1658
                                                                                                                                                                     seq_name: /cyn2_6/ptodata/2/ina/6B_COMB.seq:US-09-103-840A-1
                                                                     515 yGlyLeuGlnGluSerSerHis.....ArgGluTrpGlyGlnGlu 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Align seg 1/1 to: US-09-103-840A-1 from: 1 to: 4411529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length: 476
Gaps: 14
Percent Identity: 22.479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Mycobacterium tuberculosis
OTHER INFORMATION: H37Rv
US-09-103-840A-1
                                                                                                                                                                                                                       seq_documentation_block:
    Sequence 1, Application US/09103840A
    Sequence No. 6294328
    SERERAL INFORMATION:
    APPLICANT: FLEISCHMAN, Robert D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-911-667A-2 x US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quality: 230.00
Ratio: 0.975
nilarity: 49.580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
```

	-	
218 lalleGlyThrValPheGluValValLeuAlaValPheValMetProSer 234		
235 LeuGlyTrpArgTrpLeuLeuIleLeuSerAlaValProLeuLeuLeuPh 251 		
251 eAlaValLeuCysPheTrpLeuProGluSerAlaArgTyrAspValLeuS 268 : 11 :: :: ::::		,
268 erGlyAsnGlnGluLySAlaTleAlaThrLeuLySArglleAlaThrGlu 284 :: :: ::		iš
285 AsnGlyAlaProMetProLeuGlyLySLeullelleSerArgGlnGluAs 301 		
301 pargGlyLysMetargaspLeuPheThrProHisPheArgTrpThrThrL 318 		
318 euLeuLeuTrpPheIleTrpPheserAsnAla 328		
329 PheSerTyrTyrGlyLeuValLeuLeuThrThrGluLeuPheGlnAlaGl 345 :::		
345 yAspValCysGlyIleSerSerArgLysLysAlaValGluAlaLysCysS 362		
362 erLeuAlaCysGluTyrLeuSerGluGluAspTyrMetAspLeuLeu 377 ::: ::: 718043		
378trpThrThrLeuSerGluPheProGlyValLeuValThrLe 391 ::::::::::::::::::::::::::::::::::::		
391 uTrpIleIleAspArgLeuGlyArgLysLysThrMet		
404AlaLeuCysPheValIlePheSer 411 :: ::::: :: 718161CGACGATGATCACCGCAGATGCCGTGTTCGCCCAACGAC 3718210		
412PheCysSerLeuLeuPh 418		
418 eIleCysValGlyArgAsnValLeuThrLeuLeuPheIleAlaArgA 435 :: 718261CATCATCGGGTTCAACTTC	•	Ď
435 laPheIleSerGlyGlyPheGlnAlaAlaTyrValTyrThrProGlu 450 :: :::: :: 718280GGATTCGGCTCGCTGGTCTGGGTAACGCCGCGAG 3718315		ď
451 ValTyrProThrAlaThrArgAlaLeuGlyLeuGlyThrCysSerGl 466 ::: ::: :::		ro T
466 yMetalaargValGlyalaLeuIleThrProPheIlealaG 480 ::::::! ::::: :::::: 718366GACACTGACGGCCAACGCGATCGTTGCCGCTTCTCGCTCACCATGCTGC 3718415		•

```
497 CysCysLeuLeuAlaAlaLeuAlaSerCysPheLeuProlleGluThrLy 513 ::::::::||| ::::::||| 3718457TTCGCCCGTCGTCGTCGTGGTCGTGTCGTGATCCTTTCCGCCGGAGACCAA 3718506
                                   ::|||:::
3718416GTGTGCTCGGCGGCGCGTTTTC........GCGGTCTTCGGCACG 3718456
                                                                                                                                                                                                                                                                                                                    eq_documentation_block:
Sequence 1, Application US/08964127
Patent No. 6277565
Patent No. 6277567
APPLICANT: Grandearl, Andrew David John
TITLE OF INVENTION: NOVEL GENES ENCODING TRANSPORTER-LIKE
TITLE OF INVENTION: MOLECULES
NUMBER OF SEQUENCES: 17
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          104 Leus rIleLeualaproGlnLeuHisCysGluTrpArgLeuPro.... 118
480 lnValMetLeuGluSerSerValTyrLeuThrLeuAlaValTyrSerGly 496
                                                                                                                                                                                                                                                                         eq_name: /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-08-964-127-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length: 453
Gaps: 24
Percent Identity: 25.607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1 to: US-08-964-127-1 from: 1 to: 2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE: MA
COUNTRY: USA
COUNTRY: USA
COMPUTER READBLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: FastSEQ for Windows Version 2.0b
SOFTWARE: Windows Version 2.0b
FILING DATE: 06-NOV-1997
FILING DATE: 06-NOV-1997
PRIOR APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICAL...
FILING DATE:
ATTORNEY AGENT INFORMATION:
NAME: Crews, Ph.D., L. Lee
REGISTRATION NUMBER: P-43,567
REFERENCE/DOCKET NUMBER: 07334/038001
TELEPHONE: 617/542-5070
TELEPHONE: 617/542-6906
TELERA: 617/542-8906
TELERA: 200154
INFORMATION FOR SEQ ID NO: 1:
SEGUURCE CHARRATERISTICS:
LENGTH: 2460 base pairs
                                                                                                                                                                                                               513 sGlyGlyGlyLeuGlnGluSerSerHis 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: Fish & Richardson P.C. STREET: 225 Franklin Street CITY: Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              lignment_block:
US-09-911-667A-2 x US-08-964-127-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: Coding Sequence
LOCATION: 498...2057
S-08-964-127-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: Genomic DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   203.50
0.873
51.435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   lignment_scores:
```

η.	CTTCCTGTGCTCACCACCACCCATCGGCCAGTGGGATCTGGTGTGT	ro or
119	SerTrpGlnValAlaLeuLeuThrSerValValPheValGlyMeLM :::	134 831
134 832	etSerSerThrLeuTrpGlyAsnIleSerAspGlnTyrGlyArgLys ::::: :::: :::: :::: CTCCGGCTACCTGTTCTGGGTTACCCCGCAGACAGATTTGGCCGTCGC	150 881
151 882	ThrGlyLeuLysIleSerValLeuTrpThrLeuTyrTyr	163 919
164 920	.GlyIleLeuSerA ::: ::: TGGAGTAGGAGGGG	180 969
180 970	rgGlyLeuValGlyPheGlyIleGlyGlyValProGlnSerValThrLeu ::: :::::	196 1019
197 1020	TyrAlaGluPhe 	212 1069
212 1070	ulleGluValPheTrpAlaIleGlyThrValPheGluValValLeuAlaV	229 1110
229	alPheValMetProS :::::: GCCTGGCCCTTGTCT	245 1160
246 1161	ValProLeuLeuLeuPheAlaValLeuCysPheTrpLeuPro	259 1204
260 1205	GluserAlaArgTy 	275 1254
275 1255	lealaThrLeuLysargIlealaThrGluasnGlyalaProMetProLeu :::::: :::::	291 1295
292 1296	GlyLysLeullelleSerArgGlnGluAspArgG :::::::: GGGCAGATGCTGGGGGAGGAGGCCCAGG	308 1339
308 1340	u I GGAGAATACCTGCC	318 1389
318 1390	euLeuleuTrpPheileTrpPheSer TCTCAACTACCGCAACATCTGGAAAATCTGCTTATCCTGGGCTTCACC	326 1439
327 1440	ASNAlaPheSerTyrTyrGlyLeuValLeuLeuThrThrGluLeuPheGl 	343 1486
343 1487	nAlaGlyAspValCysGly1leSerSerArgLysL:: ::: ::: ::: ::: ::: ::: AGGAGGGAGCCCATCGGACTTCTACCTGTGCTCTGCTGGCCAGCGGCA	355 1536
355 1537	ysAlaValGluAlaLysCysSerLeuAlaCysGluTyrLeuSerGluGlu ::: ::: CCGCAGCCCTGGCCTGTGTCTTCCTG	371 1562
372 1563	AspTyrMetAspLeuLeuTrpThrThrLeuSerGluPheProGlyValLe	388 1570

```
seq_documentation_block:
; Sequence 2, Application US/09103840A
; Patent No. 6294328
; GENERAL INCPEMATION:
; APPLICANT: FLEISCHMAN, Robert D.
; APPLICANT: WHITE, Owen R.
; APPLICANT: WHITE, Owen R.
; APPLICANT: WEASER, Claire M.
; APPLICANT: WENTON: DNA SEQUENCES FOR STRAIN ANALYSIS IN MYCOBACTERIUM
; TITLE OF INVENTION: DNA SEQUENCES FOR STRAIN ANALYSIS IN MYCOBACTERIUM
; TITLE OF INVENTION: DNA SEQUENCES
; FILE REFERENCE: 2436-20007.00
; CURRENT FILING DATE: 19:08-06-24
; NUMBER OF SEQ ID NOS: 2
; SOFTWARE: Patentin Ver. 2.1
; SEQ ID NO 2
; LENGTH: 4403765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OTHER INFORMATION: CDC 1551

OTHER INFORMATION: "n" bases at various positions throughout the sequence

OTHER INFORMATION: represent a, t, c or g
US-09-103-840A-2
438 r......GlyGlyPhe.....GlnAlaAlaTyrVaiTyrT 448 : 111 | 111 | 11111111 ::: : 1182 cACTTTCTCTTGGGCTCTTCTCCTCCCCAAGCTGCCGCATCCTC 1731
                                                                                                                                                                                                                                                                                                                                                                                1830 .GCCCAGCGCTCCACATGGGCCATGGAGCCTTCCTGCAGCACGAGGGTGC 1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   448 hr.....ProGluValTyrProThrAlaThrArgAlaLeuGly 460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    477 elleAlaGlnValMetLeuGluSerSerValTyrLeuThrLeuAlaValT 494
                                                                                                                                                                           422 GlyArgAsnValLeuThrLeuLeuLeuPhelleAlaArgAlaPhelleSe 438
                                                                                                                                                                                                                                                                                                                                                                                                                                            461 LeuGlyThrCysSerGlyMetAlaArgValGlyAlaLeuIleThrProPh 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            494 yrSerGlyCysCysLeuLeuAlaAlaLeuAlaSerCysPheLeuProIle 510
                                                                                       405 euCysPheValllePheSerPheCysSerLeuLeuLeuPheIleCysVal 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_name: /cgn2 6/ptodata/2/ina/6B_COMB.seq:US-09-103-840A-2
                                                                                                                      Length: 534
Gaps: 19
Percent Identity: 22.097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
ORGANISM: Mycobacterium tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_block:
US-09-911-667A-2 x US-09-103-840A-2/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        246.50
0.970
47.566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1926 GAGACCAAG 1934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 511 GluThrLys 513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_scores:
```

verse of: US-09-103-840A-2 from: 1 to: 44	03765
12 ProvalValLysPheArgArgThrGlyGluSerAlaArgSe 25	621
25 rGluAspAspThrAlaSerGlyGluHisGluValGlnIleGluGlyValH 42	602
58 21475	554
59 GluPheAlaAsnProThrAspaspThrPheMetValGluAspAlaValG1 75 :: ::	528
92 21474	478
92 eualatrpmetalaaspalametGlumetMetIleLeuSerIleLeuala 108 ::: :::: :::::: :::::: 2147477GGGTTGGACGATGGATGCGTTGATTACTTCTCGTGGTGCTGGTGTTAT 21474	428
109 ProGinheuHisCysGluTrpArgLeuProSerTrpGlnValAlaLeuLe 125 ::::: :::	378
125 uThrSerValValPheValGlyMetMetSerSerThrLeuTrpGlyA 142	
142 snlleSerAspGlnTyrGlyArgLysThrGlyLeuLysIleSerValLeu 158 ::: :::	
159 TrpThrLeuTyrTyrGlyIleLeuSerAlaPheAlaProValTyrSerTr 175 :::	7228
175 pIleLeuValLeuArgGlyLeuValGlyPheGlylLeGlyGlyValP 191 :::::::::::	
191 roGinSerValThrLeuTyrAlaGluPheLeuProMetLysAlaArgAla 207 :::::::	128
208 LyscysIleLeuLeulleGluValPheTrpAlaIleGlyThrValPheGl 224	1078
224 uValValLeuAlaValPheValMetProSerLeuGlyTrpArgT 239 11	
239 rpLeuLeulleLeuSerAlaValProLeuLeuLeuPheAlaValLeuCys 255	
256 PheTrpLeuProGluSerAlaArgTyrAspValLeuSerGlyAsnGlnGl 272 ::::: ::	5937
272 uLysalailealaThrLeuLysargilealaThrGluAsnGlyalaProm 289 :::	2888
289 etProLeuGlyLysLeullelleSerArgGlnGluAspArgGlyLysMet 305 2146887GCAATTGTGCGCGGG214687	5873

306 ArgaspLeuPheThrProHisPheargTrpThrThrLeuLeuTrp 321 	
322 .PhelletrpPheSerAshAlaPheSerTyrTyrGlyLeuVall 336	
336 euLeuThrThrGlu	
341LeuPheGlnalaGlyAspValCysGlyIleSerSerArgLy 354 2146743ATAGTGGTGATCTACAACATCGGCCCATCATCGGC	
354 sLysAlaValGluAlaLysCysSerLeuAlaCysGluTyrLeuSerGluG 371 2146708	
371 luAspTyrMetAspLeuLeuTrpThrThrLeuSerGluPheProGlyVa 	
388 LeuvalThrLeuTrpIleIleAspArgLeuGlyArgLysLysThrMetAl 404	
CTGGGAC	
414 erLeuLeuPheIleCysValGlyArgAsnValLeuThrLeuLeuLeu 430 	
431 PheIleAlaArgAlaPheIleSerGlyGlyPheGlnAlaAlaTyrValTy 447	
447 rThrProGluValTyrProThrAlaThrArgAlaLeuGlyLeuGlyThrC 464	
464 ysSerGlyMetalaArgValGlyAlaLeulleThrProPhe 477	
478IlealaGlnValMetLeuGluSerSerValTyrLeuThrLeuAlaVa 493 :: :: 2146437CCTATTCAAGAGCGTCTGGCCGAATCCCATGGCTAC 2146402	
493 lTyrSerGlyCysCysLeuLeuAlaAlaLeuAlaSerCysPheLeuProI 510	
510 le 510 : 2146370TG 2146369	
seq_name: /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-103-840A-1	
seq_documentation_block: Sequence 1, Application US/09103840A Patent No. 6294328 SERENAL INFORMATION: APPLICANT: FLEISCHMAN, Robert D. APPLICANT: FRESER, Claime M. APPLICANT: PRASER, Claime M. APPLICANT: VENTER, John C. TITLE OF INVENTION: DNA SEQUENCES FOR STRAIN ANALYSIS IN MYCOBACTERIUM TITLE OF INVENTION: THREFULIOSIS	ERIUM

	are Managamanana				ti dan rasa karen set	Na <u>make pr</u> esident				·		-				.
FILE REFERENCE: 24366-20007.00 CURRENT APPLICATION NUMBER: US/09/103,840A CURRENT FILING DATE: 1998-06-24 NUMBER OF SEQ ID NOS: 2 SOFTWARE: Patentin Ver. 2.1 SEQ ID NO 1 LENGTH: 4411529 TYPE: DNA OKGANISM: Mycobacterium tuberculosis COTHER INFORMATION: H37RV	alignment_scores: Quality: 246.50 Length: 534 Ratio: 0.970 Gaps: 19 Percent Similarity: 47.566 Percent Identity: 22.097	alignment_block: US-09-911-667A-2 x US-09-103-840A-1/rev	Align seg 1/1 to reverse of: US-09-103-840A-1 from: 1 to: 4411529	12 ProvalvalLysPheArgArgThrGlyGluSerAlaArgSe 25	25 rGluAspAspThrAlaSerGlyGluHisGluValGlnIleGluGlyValH 42	42 isValGlyLeuGluAlaValGluLeuAspAspGlyAlaAlaValProLys 58 :::	59 GluPheAlaAsnProThrAspAspThrPheMetValGluAspAlaValG1 75 :: ::	75 uAlalleGlyPheGlyLysPheGlnTrpLysLeuSerValLeuThrGlyL 92	92 euhlatrpMetalaAspalaMetGluMetMetIleLeuSerIleLeuAla 108 	109 ProGinLeuHisCysGluTrpArgLeuProSerTrpGlnValalaLeuLe 125 ::::: ::: :: 2150167GCGGACATCGUAACGACGACGACGACGACGTTCT 2150118	125 uThrSerValValPheValGlyMetMetSerSerSerThrLeufrpGlyA 142	142 snileSerAspGlnTyrGlyArgLysThrGlyLeuLysIleSerValLeu 158 ::: :::	159 TrpThrLeuTyrTyrGlyIleLeuSerAlaPheAlaProValTyrSerTr 175 :::	175 pfleLeuValLeuArgGlyLeuValGlyPheGlyIleGlyGlyValP 191 :::::::::	191 roGlnSerValThrLeuTyrAlaGluPheLeuProMetLysAlaArgAla 207 :::::::: :: :: 2149917GGCTGGCGCGCGTGCCAGCGAGCGGCGTGGC 2149868	208 LysCyslleLeuLeulleGluValPheTrpAlaIleGlyThrValPheGl 224

71435	86/GTCTTCTCCGGGCTGCAGGGGCTACGCGTTCGGCTATCTGCTGGC	0100 - 13
22	24 uValValLeuAlaValPheValMetProSerLeuGlyTrpArgT	239 2149768
23	39 rpLeuLeuIleLeuSerAlaValProLeuLeuLeuPheAlaValLeuCys	255 2149718
	6 PheTrpLeuProGluSerAlaArgTyrAspValLe	272 2149677
27	sArg1 CCGAA	289 2149628
28	LeuI	305 2149613
3(21496	06 ArgAspLeuPheThrProHisPheArgTrpThrThrLeuLeuLeuTrp 	321 2149584
35	helleTrpPheSerA: TCAACTGGATGAGCC	336 2149534
312	36 euLeuThrThrGlu	340 2149484
3,	•	354 2149448
Ë	${\tt laValGluAlaLysCysSerLeuAlaCysGluTyrLeuSerGluValGluAlaLysCysSerGluAlaCysCysSerGluAlaCysCluAlaCysCluAlaCysGluAlaCysGluAlaCysCl$	371
2149	448	2149448
3.	AspTyrMetAspLeuLeuTrpThrThrLeuSerGluPh ::: ::: GGTCTGGCGTTCGCCACGTTGTCCCAG	387 2149421
31	88 LeuValThrLeuTrpIleIleAspArgLeuGlyArgLysLysThrMetAl 	404 2149395
2149	404 aLeuCysPheVal	414 2149345
2149	14 erLeuLeuLeuPheIleCysValGlyArgAsnValLeuThrLeuLeuLeu ::::: ::: 344GCACTGCGGCGATGTTGTGCCTGGGTTCG	430 2149316
2149	SlnAlaAlaTyrValT ::: GGTGATCCCCGCGC	447 2149266
2149	47 rThrProGluValTyrProThrAlaThrArgAlaLeuGlyLeuGlyThrC:	464 2149228
2149	erGlyMetAlaArgValGlyAlaLeuIleThrProl ::::: ::::: :::::: CGGCGTAACCTACCAGCTCGGTAATCTGCTGGCGCG	477 2149178
4 04.00	478IleAlaGlnValMetLeuGluSerSerValTyrLeuThrLeuAlaVa	493

493 lTyrSerGlyCysCysLeuLeuAlaAlaLeuAlaSerCysPheLeuProl 510	
510 le 510 :: 2149110TG 2149109	
seq_name: /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-591-025-8	
seq_documentation_block: Sequence 8, Application US/09591025 Sequence 8, Application US/09591025 Sequence 8, Application US/09591025 GENERAL INCORMATION: APPLICANT: Bogan, Jonathan S. APPLICANT: Lodish, Harvey F. TITLE OF INVENTION: Targeting of GLUT4 TITLE OF INVENTION: Targeting of GLUT4 TILE REFERENCE: 0399.1210-004 CURRENT APPLICATION NUMBER: US/09/591,025 CURRENT APPLICATION NUMBER: 06/154,078 PRIOR PLILNG DATE: 1999-06-09 PRIOR FILING DATE: 1999-06-09 NUMBER OF SEQ ID NOS: 8 SOOTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 8 LENGTH: 2592	
TYPE: DNA ORGANISM: Artificial Sequence FEATURE: COTHER INFORMATION: modified GLUT4 containing myc tag sequences US-09-591-025-8	
alignment_scores: Quality: 154.50 Length: 465 Ratio: 0.709 Gaps: 23 Percent Similarity: 46.882 Percent Identity: 23.226	
alignment_block: US-09-911-667A-2 x US-09-591-025-8	
Align seg 1/1 to: US-09-591-025-8 from: 1 to: 2592	
123 AlaLeuLeuThrSerValValPheValGlyMetMetSerSerThrLe 139	
139 uTrpGiyAsnIleSerAspGlnTyrGlyArgIysThrGlyLeuLysIle. 155	
156SerValLeuTrpThrLeuTyrTyrGlylleLeuSerala 168 :::	
169 PheAlaProValTyrSerTrpIleLeuValLeuArgGlyLeuValGlyPh 185	
185 eGlyIleGlyGlyValProGlnSerValThrLeuTyrAlaGluPheL 201 	
201 euProMetLysAlaArgAlaLysCysIleLeuLeuIleGluValPheTrp 217	
218 AlaIleGlyThrValPheGluValValLeuAlaValPheValMe 232	

0.70)
232	tProSerLeuGlyTrpArgT	239
876	SCTTGGAGTCCCTCCTGGGCACTGCCAGCCTGT	925
239	rpLeuleuleLeuSerAlaValProLeuLeuLeuPheAlaValLeuCys 	255 975
256	PheTrpLeuProGluSerAlaArgTyrAspValLeuSerGlyAsnGlnGl ::	272 1025
272	uLysalaIlealaThrLeuLysargIleala	282 1075
283	CTGGGGTGGCTGAGGGGGGGGGGGGGGGGGGGGGGGGGG	286
28 12	laProMetProLeuGlyLysLeullelleSerArgGlnGluAspArg ::: ::: ::: ::: GGCCACTGTCCTGGGCAGCCGTACCCAC	03
303	etArgAspLeuPheThrProHisPheArgTrpThrThrLeuLe: :::: CGGCAGCCCTGATCAT	320 1186
320	TrpPhelleTrpPh ::: GTCGTGCTGCAGC	330 1236
331	TyrTyrGlyLeuValLeuLeuThrThrGluLeuPheGlnAlaGlyAspVa TATTATTCGACCAGCATCTTCGAGAGCAGGGGT	347
347	leSerSerAr	364
364	luTyrLeuSerGluGluAspTyrMetAspLet :::::: GGTGTGGTCAACACK	380 1326
381	PheProGlyValL T	397 1355
397 1356	yArgLysThr	407 1405
1406	heValilePheSerPheCysSerLeuLeuLeu	417
418	PhelleCysValGlyArgAsnValLeuThrLeuLeuLeuPhelleAl	433
433	aArgAlaPheIleSerGlyGlyPheGlnAlaAlaTyrV	446 1543
1544	alTyrThrProGluValTyrProThrAlaThrArgAlaLeuGlyLeuGly ::::::: TCTTCAGCCAGGGACCCCGCCGGCAGCCATGGCTGGCTGG	462 1593
463 1594	ThrCysSerGlyMetAlaArgValGlyAlaLeuIleThrProPheIleAl ::: ::::: ::::!! ::::!! aACTGGACGAGCAATCATTGGCATGGGTTTCCAGTATGTTGC	479

```
20306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20033
                                           | :::|||:::|||:
20513 CTACGCTCAGTTCGACAGACCTTGTCGAATTCGGTGGGAGAAATGGGAA 20464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19932 CCGGCGAGATCCTCGGGGTGACCGCCTGCCTGCCTGAAC 19883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          261 rAlaArgTyrAspValLeuSerGlyAsnGlnGluLysAlaIleAlaThrL 278
                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20263 .....GTGATCACCGGCTACCTGGTCAGCACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1111 ::::111 :::111 :::111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20355 CCGTGCTGCTCGCCACTCGACCACGCGTGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        106 11eLeualaproGlnLeuHisCysGluTrpArgLeuProSerTrpGlnVa ::::::: ||||||||||| :::
                                                                                                                                                45 euGluAlaValGluLeuAspAspGlyAlaAlaValProLysGluPheAla
                                                                                                                                                                                                                       20463 TGGCGAACGCCACCTCGCAGACGGCGAGGCCGTCGCGGACGAGGCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            168 aPheAlaProValTyrSerTrpIleLeuValLeuArgGlyLeuValGlyP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20032 GCCCGGTGCGCGAGCGCGCGCTACTTCTCGTACCTGATGATGGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .....AGCGTGCGCAAGGCGCTCAACCTGC
                                                                                                                                                                                                                                                                                                     62 AsnProThrAspAspThrPheMetValGluAspAlaValGluAlaIleGl
                                                                                                                                                                                                                                                                                                                                                                        20413 GGCCCCGCC.....GG
                                                                                                                                                                                                                                                                                                                                                                                                                                                  78 yPheGlyLysPheGlnTrpLysLeuSerValLeuThrGly.....LeuA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93 laTrpMetAlaAspAlaMetGluMetMetIleLeuSer......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20305 ACGATCGGCGACCAACTGCACGGCCAG...ACCGTCCAGGCCTGG....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         122 IAlaLeuLeuThrSerValValPheValGlyMetMetSerSerThrL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          139 eu.....TrpGlyAsnIleSerAspGlnTyrGlyArgLysThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               152 GlyLeuLyslleSerValLeuTrpThrLeuTyrTyrGlylleLeuSerAl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20182 CTCTATCTGGCGGCGATCGCGGTCTTCATCGTCGGCTCGGCGGCCTGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     heGlyIleGlyGlyValProGlnSerValThr...LeuTyrAlaGluPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20082 redecedecedecedergregereceaecedecerearecedecere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    231 ......ValMetProSerLeuGlyTrpArgTrpLeuLeuIleLeuSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             245 AlaValProLeuLeuLeuPheAlaValLeuCysPheTrpLeuProGluSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            288 PrometProLeuGlyLysLeuIleIleSerArgGlnGluAspArg....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  201 LeuProMetLysAlaArgAlaLysCysIleLeuLeulleGluValPheTr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pAlalleGlyThrValPhe...GluValValLeuAlaValPhe.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           278 euLysArglleAlaThrGlu.....AsnGlyAla.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .9882 ...Greccecredererestecrecrecre..........
sGluValGlnIleGluGlyVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application US/08125468
Patent No. 5589385
GENERAL INFORMATION:
APPLICANT: Ryan, Michael J.
APPLICANT: Entini, Jason A.
APPLICANT: Strathy, Nancy
APPLICANT: Strathy, Nancy
APPLICANT: Strathy, Nancy
APPLICANT: Cloning of the biosynthetic pathway for
TITLE OF INVENTION: Cloning of the biosynthetic pathway for
TITLE OF INVENTION: useful therein
NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
ADDRESSED: American Cyanamid Company
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to: 30001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1641 GGAGGCTATG ...GGGCCCTACGTCTTCCTTGTATTTGCGGTC...... 1680
                                                                                                                                                                                                                       .....CTCCTGCTGGGCTTCTTCATCTTCATCTTAAGAGTACCTGAA 1725
479 aGlnValMetLeuGluSerSerValTyrLeuThrLeuAlaValTyrSerG 496
                                                                                                                                                496 lyCysCysLeuLeuAlaAlaLeuAlaSerCysPheLeuProIle...Glu 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18 ArgThrGlyGluSerAlaArgSerGluAspAspThrAlaSerGlyGluHi 34
                                                                                                                                                                                                                                                                                                                                                1726 ACTCGAGGCCGGACGTTGACCAGATCTCGGCTGCCTTCCACCGG 1770
                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_name: /cgn2_6/ptodata/2/ina/5A_COMB.seq:US-08-125-468-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION NUMBER: US/08/125,468

FILING DATE: 22-SEP-1993

CLASSIFICATION: 435

ATTORNEY/AGENT INFORMATION:

NAME: TSevdos, Estelle J

REGISTRATION NUMBER: 31,145

REFERENCE/DOCKET NUMBER: 31,255-02

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELEPHONE: (201)831-3241
                                                                                                                                                                                                                                                                                              512 ThrLysGlyGlyGlyLeuGlnGluSerSer......HisArg 523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length: 536
Gaps: 27
Percent Identity: 22.575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to reverse of: US-08-125-468-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-911-667A-2 x US-08-125-468-1/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      One Cyanamid Plaza
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: (201)831-3305
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 30001 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              151.50
0.613
46.082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New Jersey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET: One C
CITY: Wayne
STATE: New Je
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS:
TOPOLOGY: lir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-125-468-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Align seg 1/1
                                                                                                                                                                                                                       1681
```

BOX TO FE	CLASSIFICATION: 435 PRIOR APPLICATION: 435 APPLICATION NUMBER: US 08/125,468 FILLING DATE: 22-SEP-1993 ATTORNEY, ESTENT INCRMATION: REGISTRATION NUMBER: 31,145 REFERENCE/DOCKET NUMBER: 31,255-02 TELECOMMUNICATION INFORMATION: TELEFAN: (201)831-324 TELEFAN: (201)831-324 TELEFAN: (201)831-324 TELEFAN: (201)831-324 TELEFAN: (201)831-324 TELEFAN: (201)831-326 SEQUENCE CHARACTERISTICS: LENGTH: 30001 base pairs TYPE: nucleic acid STRANDEDNESS: single TOPOLOGY: linear WOLECULE TYPE: DNA (genomic)	alignment_scores:	TACGCTCAGTTCGACAAGACCTTGTCGAATTCGGTGGGAAATGGGAA 2 euGluAlaValGluLeuAspAspGlyAlaAlaValProLysGluPheAla 6 ::::::::::::::::::::::::::::::::::::	crtcActcGcCaGAtCATCACGCGCTGTCGGGGCTCCTGTTGG llis:::::::::::::::::::::::::::::::::::
GGGCTGGGATCGCGGTTGCTGA GGGCTGGGGATCGCGGTTGCTG	350 Secretary Lysalawal Glubla Lyscys SerLeualacys Glut 367 :::::::	439 19446 19396 19396 488 19302	485SerSerValTyrLeuThrLeuAlaV 493 19301 CTGGCTGGGCTTCGGCATCGGCTCTCCCAGACCGTCATCACCTGGCGA 19252 493 alTyrSer 495 : 19251 TCCAGAGC 19244 seq_name: /cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-474-933-1 seq_documentation_block: Sequence 1, Application US/08474933	Patent No. 5866410 GENERAL INFORMATION: APPLICANT: Ryan, Michael J. APPLICANT: Extin, Jason A. APPLICANT: Strathy, Nancy APPLICANT: Fantin, Susan E. TITLE OF INVENTION: Cloning of the biosynthetic pathway for TITLE OF INVENTION: Cloning of the biosynthetic pathway for TITLE OF INVENTION: Cloning of the biosynthetic pathway for TITLE OF INVENTION: Cloning of the biosynthetic pathway for TITLE OF INVENTION: Loseful therein TITLE OF INVENTION: useful therein NUMBER OF SEQUENCES: 1 CORRESPONDENCE ADDRESS: ADDRESSEE: American Cyanamid Company STREET: One Cyanamid Plaza

20263	GTGATCACCGGCTACCTGGTCAGCTCACGA	20233
139	euTrpGlyAsnlleSerAspGlnTyrGlyArgLysThr	151 20183
15	GlyLeuLyslleSerValLeuTrpThrLeuTyrTyrGlylleLeuSerAl	
20182		20133 185
20132		20083
185 20082	hedlyileGlyGlyValProGlnSerValThrLeuTyrAlaGluPhe ::: :: :: ::: :::	200 20033
20032	LeuProMetLysalaArgAlaLysCysIleLeuLeuIleGluValPheTr 	217 19983
217	palalledlyThrValPheGluValValLeuAlaValPhe ::: ::: : :	230 19933
231 19932	CGGGGGGGTGACTGCTGCTGCTTCCTGGTTCTCCTGATCATCCTCCTGATCAAC	244 19883
245 19882	AlavalProLeuLeuLeuPheAlavalLeuCysPheTrpLeuProGluSe	261 19856
261 19855		278 19831
278 19830	euLysArgIlealaThrGlussnGlyAla	287 19781
288 19780	PrometProLeuGlyLysLeullelleSerArgGlnGluAspArg	302 19731
303 19730	GlyLysMetargAspLeuPheThrProHisPheArgTrpThrT :::	317 19705
317	hrLeuLeuLeuTrpPheIleTrpPheSerAsnAlaPheSerTyrTyrGly	333 19679
33 4 19678		350 19662
350 19661	eSerSerArgLysLy :::::: cGCCGAACGGGCCCG	367 19634
367	<pre>yrLeuSerGluGluAspTyrMetAspLeuLeuTrpThrThrLeuSerGlu</pre>	383
19634		19634
384 19633	PheProGlyValLeuValThrLeuTrplleIleAspArgLeuGlyArgLy :::	400 19596
400	sLysThrMetAlaLeuCysPheValile GATGACCACGGCGTCACTTCGCGTACGG	410 19546

```
No. 59587270 No. 5958727disk of No. 5958727th America, Inc
                                                                                                                                                                                                                                                                                                    APPLICANT: Lamsa, Michael
APPLICANT: Lamsa, Michael
APPLICANT: Lamsen, Kin
TITLE OF INVENTION: Methods for Modifying the Production of
TITLE OF INVENTION: a Polypeptide
NUMBER OF SEQUENCES: 80
CORRESPONDENCE ADDRESS:
ADDRESSEE: No. 59587270 No. 5958727disk of No. 5958727th A
                                                                                                                                     19495 GTCGCCGGACTGGTGATCATCCCGGTGATGACCGGGGCGATCGTCTCCCA 19446
                                                                                                                                                                                                                                                                                                                                                                                                                                 19348 GCCGCGGGCGCG...GACACCCCGCTCGCGGTGATCGTGGTGATCGCGGC 19302
                                 19445 GACGATCTGCGCCAAGATCATCAAGAAGTGGAACCGCTACAAGAAGCCCG 19396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19301 CTGGCTGGGCTTCGGCATCGGGCTCTCCCAGACCGTCATCACCCTGGCGA 19252
                                                                                              426 .....LeuThrLeuLeuLeuPhelleAlaArgAlaPhelleSerGl 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        485 .....SerSerValTyrLeuThrLeuAlaV 493
                                                                                                                                                                                                 439 yGlyPheGlnAlaAlaTyrValTyrThrProGluValTyrProThrAlaT 456
410 heSerPheCysSerLeuLeuLeuPheIleCysValGlyArgAsnVal... 425
                                                                                                                                                                                                                                                                                                                                                                                                          469 ArgValGlyAlaLeuIleThrProPheIleAlaGlnValMetLeuGlu.. 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: /cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-928-692-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTY: USA
ZIP: 10174
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: Diskette
COMPUTER: Diskette
COMPUTER: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/928,692
FILING DATE: 12-SEPT-1997
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4944.200-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_documentation_block:
; Sequence 9, Application US/08928692
; Patent No. 5958727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
NAME: Lambiris, Ellas J
REGISTRATION NUMBER: 33,728
REFERENCE/DOCKET NUMBER: 4944
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-867-0123
TELEPHONE: 212-878-9655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       405 Lexington Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Deborah S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 3000 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: Brody, Howard
APPLICANT: Yaver, Deborah
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TOPOLOGY: linear
; MOLECULE TYPE: CDNA
US-08-928-692-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19251 TCCAGAGC 19244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: New York STATE: NY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           493 alTyrSer 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: nucleic STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
```

	516 GlyLeuGlnGluSerSerHisArgGluTrpGlyGln 527 ::::::::::::::::::::::::::::::::::::	516
2005	TCCTCGGAAGTTTCATCTACTGGTGGTGCCGGAGACCAAGGGG	1962
515	euLeuAlaAlaLeuAlaSerCysPheLeuProlleGluThrLysGlyGly	499
1961	CGGACGAGGCAAGATCTACTGCAGCGATGGCCTGTC	1918
499	GluSerSerValTyrLeuThrLeuAlaValTyrSerGlyCysCysL 499	484
1917	GCCACGTTCATCGTGGCACAATTTTTTCCGATGTTAAACGATTTGTTGGG	1868
483	AlaGlnValMetLeu	479
1867		1829
478	lyThrCysSerGlyMetAlaArgValGlyAlaLeuIleThrProPhelle	462
1828		1795
462		446
1794		1748
446	LeuPhelleAlaArgAlaPhelleSerGlyGlyPheGlnAlaAlaTyrVa	430
1747	CGCTAGCCATCTACTTCAACCTGAAAGCCTTATCCGCCATAGCAGTTCTA	1698
429	helleCysValGlyArgAsnValLeuThrLeuLeu	418
1691	: ::: :::	1648
418	sThrMetAlaLeuCysPheValllePheSerPheCysSerLeuLeuP	401
1647	CCTGATAAGATTGGTAGACGCTC	1625
401	ProGlyValLeuValThrLeuTrpIleIleAspArgLeuGlyArgLysLy	385
1624	TII :::	1616
384	euSerGluGluAspTyrMetAspLeuLeuTrpThrThrLeuSerGluPhe	368
1615		1573
368	rSerArgLysLysAlaValGluAlaLysCysSerLeuAlaCysGluTyrL	351
1572	1529 TCCTCTTACAGACCATCCTTCCCACCACCTGCAGCCCTGTTGTC 1572	1529

```
1053 : AL313968 Tetraodon nigrovir
646 : BG591380 EST499222 P. Infest
1033 : H1102569 60288574F1 NC1_CG
928 : BE216528 HV_CEb0010L19f Hord
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // note="Organ: brain: Vector: pCMVSPORT 6; 1st strand cDNA was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-stranded cDNA was digested with Not I and coloned into the Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies. Context: Fermy Liang Life Technologies. Context: Prochologies, a division of Invitrogen 9800 Medical Center Drive Rockville, Maryland 20850, USA Fax: (1) 301 610 8311 Email: fliang@lifetech.com URL: 283 c 252 g 194 t 7 others
                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhin; Hominidae; Homo. (Dases 1 to 972)
Li,W.B., Gruber,C., Jessee,J. and Polayes,D.
Full-length cDNA libraries and normalization
                                                                                                                                                                                               AL523335 972 bp mRNA EST 13-FEB-2001 AL523335 LTI.NFL003_NBC3 Homo sapiens cDNA clone CS0DC001YN02 prime, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: seqref@enoscope.cns.fr, Web : www.genoscope.cns.fr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AspLeuPheThrProHisPheArgTrpThrThrLeuLeuLeuTrpPheIl 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              920 GCA.ATCGCCACCTTAAAGAGGATAGCAACTGAAAACGGGGCTCCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   290 roLeuGlyLysLeuIleIleSerArgGlnGluAspArgGlyLysMetArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length: 292
Gaps: 0
Percent Identity: 96.575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /tissue_type="neuroblastoma cells"
/lub_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to reverse of: AL523335 from: 1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone="cs0bc001yN02"
/clone_lib="LTI_NFL003_NBC3"
/sex="male"
     4.5e-16
4.1e-16
6.6e-15
7.1e-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
     453.05
453.80
432.10
431.53
                                                                                                                                                                                                                                                                                                         AL523335.1 GI:12786828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_block:
US-09-911-667A-2 x AL523335/rev
     288.50
286.00
275.50
274.50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Quality: 1445.00
Ratio: 5.088
Harity: 97.260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .972
                                                                                                                                seq_name: gb_est1:AL523335
                                                                                                                                                                                seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   236
                                                                                                                                                                                                                                                                                                                                                             human.
     9b_9ss:CNS04z93
9b_est2:BG591380
9b_est2:BI102569
9b_est1:BE216528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AL331808 Tetraodon ingroviridia
AW345918 15969 MARC 460V Bos ta
AL167780 Tetraodon nigroviridia
BL296440 UT-R-DKO-cgj-d-01-01
AW418091 55508 MARC 160V Bos ta
AW418091 55508 MARC 160V Bos ta
AW35045 EST37771 B MAGE reseque
AA35045 EST37771 B MAGE viridia
AA35045 EST37879 Infant brain
BF412623 UT-R-BT1-bnq a-O5-0-U
BF412623 UT-R-BT1-bnq a-O5-0-U
AL31878 Tetraodon nigroviridi
FB697508 UT-R-BO1-apy-c-11-0-U
AL151486 Anopheles gambiae GSS
AU057579 Sugano mouse
T10079 seq1.26 b4HB3MA Cot8-HAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ML523336 AL523336 LT_NFL000_N
| B1341271 368657 MARC 2P1G SUS 5
| BG703339 602685286F1 NH_MGC_95
| B1394002 p9p1n.pk013.c4 Normali
| AL529154 AL529154 LTI_NFL001_NH
| AL563357 AL563357 LT_NRL001_NH
| BF775076 285128 MARC 3BOV BOS 1
| AW66941 h173h10 x1 Soares_NFL
| AW66941 h173h10 x1 Soares_NFL
| AW349847 EST57001 Infant brain
| AA349847 EST57001 Infant brain
| AA343278 Tetraodon nigroviridi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GH19693.5prime GH Dros
SD02770.5prime SD Dros
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AL341594 SD02770 Sprime SD broad AL316847 Tetraodon nigroviridis BF641087 NF032A091N1F1068 Insed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AI372624 EST175519 Infant brain
AL272875 Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | AL313922 Tetraodon nigroviridi
AW097386 rs43c02.y1 Sommer Pris
C57850 C57850 Yuji Kohara unpuh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Documentation .. AL523335 LTI_NFL003_NF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ! AL332022 Tetraodon nigrovirid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unpublished
                                                                                                                                                                                                     AU207190 AU207190
AI388711 GH19693.5
                                                                                                         software, version 4.5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9972

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

9072

             out_format : pfs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1e-121
0e-104
0e-75
0e-75
0e-75
0e-74
...5e-71
1.3e-59
1.3e-54
1.4e-57
1.4e-57
1.4e-57
1.1e-45
1.1e-45
1.1e-45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16 - 39

- 46 - 35

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 76 - 33

- 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1e-18
6e-18
2e-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .6e-18
.1e-17
.3e-17
                                                                                                      Results were produced by the GenCore Copyright (c) 1993-2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZSCore
2334.61
2027.56
1593.42
1515.00
1515.78
1449.13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11227.43
11198.10
993.98
984.55
938.54
861.52
868.93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          113
00
39
28
12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              41
00
73
          OM of: US-09-911-667A-2 to: EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1245.00

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50

99.85.50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database sequences: 11351937
Database length: 1077921985
Search time (sec): 1524.690000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Strd Orig
                                                         Date: Mar 8, 2002 3:01 AM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Search information block:
Query: US-09-911-667A-2
Query length: 548
Database: EST:*
                                                                                                                                                                                  Command line parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_gss:CNSO5D2L
gb_est2:F08438
gb_est1:BE097508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gb_gss:CNS05PC2
gb_est1:AA350545
gb_est1:BE590388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gb_est2:BF775076
gb_est1:AW173250
gb_est1:AW663941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gb_gss:CNSO5LV9
gb_gss:CNSO4Z75
gb_est1:AW345918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gb_gss:CNS01UGB
gb_est2:BI296940
gb_est1:AW418091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qb_est1:AL523336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_est2:BG703339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_est2:BI394002
gb_est1:AL529154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_est1:AU220193
gb_est1:AA349847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gb_estl:AW965645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_est1:AU067579
gb_est2:T10079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_est2:T08271
gb_est1:A1372624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_est1:AW097386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gb_est1:AL563357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gb_est2:BF412623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gb_gss:CNS051H2
qb_est2:BF641087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gb_est2:BI341271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gb_est1:AI541594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gb_gss:CNSO43JM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gb_gss:CNS01MWT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gb_gss:CNS04Z7T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_gss:CNS05D6L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gb_est2:C57850
                                                                                                                 About: Results
```

```
Anote—"Organ: Drain; Vector: pCMVSPORT 6; 1st strand cDNA was primed with a NotL-olygo(dT) primer. Five prime end enriched, double-stranded cDNA was digested with Not I and coloned into the Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies, Contact: Feny Limang Life Technologies, a division of Invitrogen 9800 Medical Center Drive Rockville, Maryland 20850, USA Fax: (1) 301 610 8371 Email: fliang@lifetech.com URL: 41816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 11816 
                                                                         Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: seqrefégenoscope.cns.fr, Web : www.genoscope.cns.fr.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     281 TCGCACAGGCGAGAGTGCAAGGTCAGAGGACGACACGGCTTCAGGAGAGC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGAAGTCCAGATTGAWGGGGTCCACGTGGGCCTAGAGGCTGTGGAGCTG 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        etSerSerShrLeuTrpGlyAsnIleSerAspGlnTyrGlyArgLys 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    51 AspAspGlyAlaAlaValProLysGluPheAlaAsnProThrAspAspTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gArgThrGlyGluSerAlaArgSerGluAspAspThrAlaSerGlyGluH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34 isGluValGlnIleGluGlyValHisValGlyLeuGluAlaValGluLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   uProSerTrpGlnValAlaLeuLeuThrSerValValPheValGlyMetM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MetMetIleLeuSerIleLeuAlaProGlnLeuHisCysGluTrpArgLe
                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="CSDDC001YN02"
/clone=lib="LTI_NFL003_NBC3"
/sex="male"
/tissue_type="neuroblastoma cells"
/lab_host="DH10B"
  Full-length cDNA libraries and normalization
Unpublished (2001)
Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Identity: 96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to: 1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quality: 1256.50
Ratio: 5.006
nilarity: 97.287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Align seg 1/1 to: AL523336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-911-667A-2 x AL523336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          117
                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
Sukaryotas; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 1022)
Li,W.B., Gruber,C., Jessee,J. and Polayes,D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AL523336 1022 bp mRNA EST 13-FEB-2001
AL523336 LTI_NFL003_NBC3 Homo sapiens cDNA clone CSODC001YN02
                                                                                                                                                                                                                                                                                                                                                 eTrpPheSerAsnAlaPheSerTyrTyrGlyLeuValLeuLeuThrThrG 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                       406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            523
  821 GACCTTCTCACACCCCATTTTAGATGGACAACTTYGCTGCTGTGGTTTAT 772
                                                                           ValGluAlaLysCysSerLeuAlaCysGluTyrLeuSerGluGluAspTy 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    131 CANTACTCCGTTCATCGCCCAGGTGATGCTGGAATCCTCTGTGTACCCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    221 TTTTGCCCATTGAGACCAAGGCCGAGGACTGCAGCAGCG
                                                                                                                                                  340 luLeuPheGlnAlaGlyAspValCysGlyIleSerSerArgLysLysAla
                                                                                                                                                                               721 MACTCTTCCAGGCAGGAGATGTCTGCGGCGCGTCTCCAGTCGGAAGAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PheValIlePheSerPheCysSerLeuLeuLeuPheIleCysValGlyAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gAsnValLeuThrLeuLeuDeuPhelleAlaArgAlaPhelleSerGlyG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         440 lyPheGlnAlaAlaTyrValTyrThrProGluValTyrProThrAlaThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ulleThrProPheIleAlaGlnValMetLeuGluSerSerValTyrLeuT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PheLeuProlleGluThrLysGlyGlyGlyLeuGlnGluSerSerHisAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gGluTrpGlyGlnGluMetValGlyArgGlyMetHisGlyAlaGlyValT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AL523336.1 GI:12786829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 prime, mRNA sequence. AL523336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_name: gb_est1:AL523336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_documentation_block:
LOCUS AL523336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                    323
                                                                                                                                                                                                                                                   357
                                                                                                                                                                                                                                                                                                    671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     407
```

153

6

156

U

147

۵ 114

630 TGTCCAGCTCCAGGCTCTGGGGAAATATCTCAGACCAGTACGGCAGGAAA

```
BG703339 638 bp mRNA EST 07-MAY-2001 602685286F1 NIH_MGC_95 Homo sapiens CDNA clone IMAGE:4817829 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            257 TrpLeuProGluSerAlaArgTyrAspValLeuSerGlyAsnGlnGluLy 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          151 TGGCTGCCAGAGAGTGCAAGATATGATGTGCTCTCTGGAAACCAGGAAAA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         307 AspLeuPheThrProHisPheArgTrpThrThrLeuLeuTeuTpPheIl 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              323 eTrpPheSerAsnAlaPheSerTyrTyrGlyLeuValLeuLeuThrThrG 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  223 eGluValValLeuAlaValPheValMetProSerLeuGlyTrpArgTrpL
                                                                                                                                                                                                                                                                                                                                                euLeuIleLeuSerAlaValProLeuLeuLeuPheAlaValLeuCysPhe
                                                                                                                                                                                                                                                                                                                                                                                                                    357 ValGluAlaLysCysSerLeuAlaCysGluTyrLeuSerGluGluAspTy
                                                                                                                            Percent Identity: 97.895
                                                                                                              Gaps:
                                                                                          Length:
                                                                                                                                                                                                                    to: 570
                                                                                                                                                                                                                    from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BG703339.1 GI:13975571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     390 hrLeuTrpllelleAspArg 396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          551 CTCTCTGGATTATCGACCGC 570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   638
                                                                                      Quality: 986.00
Ratio: 5.189
Percent Similarity: 100.000
                                                                                                                                                                                                                    to: BI341271
                                                                                                                                                              alignment_block:
US-09-911-667A-2 x BI341271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_name: gb_est2:BG703339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA sequence.
BG703339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_documentation_block:
LOCUS BG703339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human.
                                                                         alignment_scores
                                                                                                                                                                                                                  Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS EDEFINITION
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Single pass sequencing. Bases called and alt_trimmed with phred v0.809004.e. Vector identified by cross_match with the .minscore 18 and .minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Design and use of two pooled tissue normalized cDNA libraries for EST discovery in swine Unpublished (2000)
Contact: Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mammalia; Butheria; Cetartiodactyla; Suina; Suidae; Sus. 1 (bases 1 to 570)
Fahrenkrug, S.C., Freking, B.A., Rohrer, G.A., Smith, T.P.L., Casas, E. Stone, R.T., Heaton, M.P., Grosse, W.M., Bennett, G.A., Laegreid, W.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="pooled"
/lab_host="DH10B"
/note="Vector: pCMV SPORT6; Site_1: Xbal; Site_2: Xhol;
Library made from pooled tissue from testis, ovary,
endometrium, hypothalamus, pituitary, and placenta."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-JUL-2001
                                                    palaileGlyThrValPheGluValValLeualaValPheValMetProS 234
                                                                                                                                                                                                                                                                                                                                                                                                              LeuProMetLysAlaArgAlaLysCysIleLeuLeuIleGluValPheTr 217
                                                                                                                                                                                                                                                                                                                                                          880 GGCCATCGGGACAGTGTTCGAGGTCGTCCTGGCTGTGTTCGTGATGCCCA 929
                                                                                                                                                                                                                                                                                                                                                                                             erLeuGlyTrpArgTrpLeuLeuIleLeuSerAlaValProLeuLeuLeu 250
                                                                                                         rAlaPheAlaProValTyrSerTrpIleLeuValLeuArgGlyLeuValG 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq_documentation_block:
LOCUS B1341271 570 bp mRNA EST 3
DEFINITION 368657 MARC 2PIG Sus scrofa cDNA 5', mRNA sequence.
ACCESSION B1341271.1 G1:15034560
                                 ThrGlyLeuLyslleSerValLeuTrpThrLeuTyrTyrGlylleLeuSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USDA, ARS, US Meat Animal Research Center PO Box 166, Clay Center, NE 68933-0166, USA Tel: 402 762 4366 Fax: 402 762 4390 Email: smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Sus scrofa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:9823"
/clone_lib="MARC 2PIG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seq primer: ATTTAGGTGACACTATAG.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plate: 108 row: D column: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BACKWARD: GITITCCCAGICACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      977 TTTGCCGTGCTGTTTTCTGGCTG 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   251 PheAlaValLeuCysPheTrpLeu 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_name: gb_est2:B1341271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       scrofa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                 151
                                                                                                       167
                                                                                                                                                                                                                                                  201
                                                                                                                                                                                                                                                                                                                          217
                                                                                                                                                                                                                                                                                                                                                                                             234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
```

100 uMetMetIleLeuSerIleLeuAlaProGlnLeuHisCysGluTrpArgL 117

```
L (Moses L. C. 0. 0.0)

National Institutes of Health, Mammalian Gene Collection (MGC)
National Institutes of Health, Mammalian Gene Collection (MGC)
L Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-rémail.nih.gov
Tissue Procurement: Miklos Palkovits, M.D., Ph.D.
CDNA Library Preparation: Michael J. Brownstein (NHGRI), Shiraki
CDNA Library Arrayed by: The LI.M.A.G.E. Consortium (LL.NL.)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the LI.M.A.G.E. Consortium/LLNL at:
http://mage.llnl.gov
Plate: LLAM10718 row: 1 column: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Organ: brain; Vector: pBluescriptR (modified pBluescript KS+); Site_1: BamHI; Site_2: Sall xhol (gtcgap pBluescript KS+); Site_1: BamHI; Site_2: Sall xhol (gtcgap p: Oligo-dT primed using primer 5'-TTTTTTTTTTTTTTTTTTTTVN-3', size-selected for average insert size 2:5 kb and normalized to ROT 5. This is a primary library enriched for full-length clones and constructed wring the cap-trapper method (carninci, in preparat.on). Library constructed by M. Brownstein (NIMH/NIGRI, National Institutes of Health). Note: this is a NIH_MGC Library."
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 638)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TrpLysLeuSerValLeuThrGlyLeuAlaTrpMetAlaAspAlaMetGl 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MetGluGluAspLeuPheGlnLeuArgGlnLeuProValValLysPheAr 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51 AspAspGlyAlaAlaValProLysGluPheAlaAsnProThrAspAspTh 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67 rPheMetValGluAspAlaValGluAlaIleGlyPheGly.LysPheGln 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25 ATGGAGGAGGACTTATTCCAGCTAAGGCAGCTGCCGGTTGTGTTTTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length: 208
Gaps: 5
Percent Identity: 95.192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone_lib="NIH_MGC_95"
/tissue_type="hippocampus"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     from: 1 to: 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4817829"
                                                                                                                                                                                                                                                                                                                                                                                                                                    High quality sequence stop: 638.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         944.00
4.697
96.635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to: BG703339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1. .638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_block:
US-09-911-667A-2 x BG703339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                     TITLE
JOURNAL
                                                                                 AUTHORS
                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    225
                                                                                                                                                          COMMENT
```

```
/note="Vector: pCMVSPORT6; Library made from equivalent pools of total RNA isolated from each tissue at different ages. Single pass sequencing from 5'-end"

145 c 169 g 177 t 11 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Gallus gallus"
/strain="Commercial broller chicken"
/db_xref="taxon:9031"
/db_xref=pgpln.pk013.c4"
/clone=lib="Normalized Chicken
Pituitary/Hypothalamus/Pineal Library"
/sex="Male and Female"
/tissue_type="Pituitary Gland/Hypothalamus/Pineal Gland"
/dev_zeage="Embryonic (d12,d14,d19); post-hatch (w1,w3,w5,w9)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae;
Phasianinae; Gallus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BI394002 662 bp mRNA EST 06-AUG-2001 pppn.pk013.c4 Normalized Chicken Pituitary/Hypothalamus/Pineal Library Gallus gallus CDNA clone pgpln.pk013.c4 5' similar to gb!AAC78627.1 (AF060173) SV2 related protein [Rattus norvegicus],
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 (bases 1 to 662)
Porter.T.E. and Cogburn,L.A.
ESTS from Normalized Chicken Pituitary/Hypothalamus/Pineal CDNA
library USDA/IFAFS Animal Genome Project
                                                                                                                                                                                                                                  150 ysThrGlyLeuLysIleSerValLeuTrpThrLeuTyr.TyrGlyIleLe 166
                                            euProSerTrpGlnValAlaLeuLeuThrSerValValPheValGlyMet 133
                                                                                                                                        MetSerSerSerThrLeuTrpGlyAsnIleSerAspGlnTyrGlyArg.L 150
                                                                                                                                                                 425 ATGTCCAGGTCCACGCTCTGGGGAAATATCTCAGACCAGTACGCCAGGGA 474
                                                                166 uSerAlaPheAlaProValTyrSerTrpIleLeuValLeuArgGlyLeuV 183
                                                                                                                                                                                                                                                                                                                                                                                                                             183 alGlyPheGlyIle.GlyGlyValProGln.SerValThrLeuTyrAlaG 199
                                                                                                                                                                                                                                                                                                                                                       GATGATGATCCTCAGCATCCTGGCACCACAGCTGCATTGCGAGTGGAGGC
                                                                                                                                                                                                                                                                                 475 AAACAGGCTGACGATCAGCGTGCTGTGGACTCTGTACCTATGGCATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cogburn@udel.edu, www.chickest.udel.edu
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Larry A. Cogburn
University of Delaware
Townsend Hall, Newark, DE 19717, USA
TFel: 302-831-1335
Fax: 302-831-2822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /lab_host="E. Coli EMDH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mRNA sequence.
B1394002
B1394002.1 GI:15087284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    199 luPheLeuProMet 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_name: gb_est2:BI394002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gallus gallus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_documentation_block:
LOCUS BI394002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 chicken.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
325
                                          117
                                                                                         375
                                                                                                                                        134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
```

```
/note="Organ: brain; Vector: pCMVSPORT 6; 1st strand cDNA was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-stranded cDNA was digested with Not I and cloned into the Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies. Contact: Feng Liang Life Technologies, a division of Invitrogen 9800 Medical Center Brive Rockville, Maryland 20850, USA Fax: (1) 301 610 http://fulllength.invitrogen.com"
                                                                                                                         Email: segref@genoscope.cns.fr, Web : www.genoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  182 ATGGAGGAGGACTTATTCCAGCTAAGGCAGCCGCCGGNTTGTGAAAWTCC 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MetGluGluAspLeuPheGlnLeuArgGlnLeuPro.ValValLysPheA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84 TrpLysLeuSerValLeuThrGlyLeuAlaTrpMetAlaAspAlaMetGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rgArgThrGlyGluSerAlaArgSerGluAspAspThrAlaSerGlyGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             50 uAspAspGlyAlaAlaValProLysGluPheAlaAsnProThrAspAspT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hrPheMetValGluAspAlaValGluAlaIleGlyPheGlyLysPheGln
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          uMetMetIleLeuSerIleLeuAlaProGlnLeuHisCysGluTrpArqL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         euProSerTrpGlnValAlaLeuLeuThrSerValValPheValGlyMet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HisGluValGlnIleGluGlyValHisValGlyLeuGluAlaValGluLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       432 TGGAAGCTGTCTGTTCTCACTGGCTTGGCTTGGATGGCTGATGCCATGGA
l (bases 1 to 778)
Li,W.B. Gruber,C., Jessee,J. and Polayes,D.
Lil-length CDNA libraries and normalization
Unpublished (2001)
Contact: Genoscope
Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
                                                                                                                                                                                                                                                           /tissue_type="neuroblastoma cells"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Identity: 93.467
                                                                                                                                                                                 /db_xref="taxon:9606"
/clone="CSODD004YD17"
/clone_lib="LTI_NFL001_NBC4"
/sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   166 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               to: 778
                                                                                                                                                                            /organism="Homo sapiens
                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 254 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               193 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      934.00
4.968
94.472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1 to: AL529154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_block:
US-09-911-667A-2 x AL529154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   150
                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                AUTHORS
TITLE
JOURNAL
COMMENT
   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         482
                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Prímates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_documentation_block:
LOCUS AL529154 778 bp mRNA EST 13-FEB-2001
DEFINITION AL529154 LTI_NFL001_NBC4 Homo sapiens cDNA clone CSODD004YD17
                                                                                                                                                                                                                                                                                                                    105
                                                                                                                                                                                                                                                                                                                                                        399
                                                                                                                                                                                                                                                                                                                                                                                         155
                                                                                                                                                                                                                                                                                                                                                                                                                            416
                                                                                                                                                                                                                                                                                                                                                                                                                                                             205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            355
                                                                                                                                                                                                                                                                                   383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   56 GTATCTGACAGGAAGACTACACTGATCTGCTCTGGACAACCCTGTCAG
                                                                                                                                                                                                                                                                                                                                                                         156 AAGAAAACCATGCCTTCTTTGTCTTTTCTTTTTGCAGCCTGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                uLeuPhelleCysValGlyArgAsnValLeuThrLeuLeuLeuPhelleA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                350 IleserSerArgLysLysAlaValGluAlaLysCysSerLeuAlaCysGl
                                                                                                                                                                                                                                                6 ATTTCCAGTAGAAGAAAGAAGTTAAAAGCAAAGTGCAGCCTGACCTGTGA
                                                                                                                                                                                                                                                                                   ufyrLeuSerGluGluAspTyrMetAspLeuLeuTrpThrThrLeuSerG
                                                                                                                                                                                                                                                                                                                                                                                                                            LysLysThrMetAlaLeuCysPheValIlePheSerPheCysSerLeuLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 euGluSerSerValTyrLeuThrLeuAlaValTyrSerGlyCysCysLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LeuAlaAlaLeuAlaSerCysPheLeuProIleGluThrLysGlyGlyGl
                                                                                                                                                                                                                                                                                                                                                      383 luPheProGlyValLeuValThrLeuTrpllelleAspArgLeuGlyArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GluValTyrProThrAlaThrArgAlaLeuGlyLeuGlyThrCysSerGl
                                                   Length: 199
Gaps: 0
Percent Identity: 90.955
                                                                                                                                                                            to: 662
                                                                                                                                                                            from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   prime, mRNA sequence.
AL529154
AL529154.1 GI:12792647
                                               939.00
4.916
95.980
                                                                                                                                                                            Align seg 1/1 to: B1394002
                                                                                                                     alignment_block:
US-09-911-667A-2 x BI394002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gb_est1:AL529154
                                                       Quality:
                                                                   Ratio:
                                                                                      Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         human.
                                    alignment_scores:
```

433

256

306 466 356 483 406 200 456

450

416 206

366

400

17

others

15

33 281 20 100 481

SOURCE ORGANISM

ACCESSION VERSION KEYWORDS

sed_name:

381

29

```
aCysGluTyrLeuSerGluGluAspTyrMetAspLeuLeuTrpThrThrL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nGlu 548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37 GGAA 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                   364
                                                                                                                                                                   398
                                                                                                                                                                                                                                                                                                                      431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                         381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Anote-Torgan: Define Vector: pCMVSPORT 6: 1st strand cubna was primed with a Not1-oligo(dT) primer. Five prime end enriched, double-stranded cDNA was digested with Not I and cloned into the Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies. Contact: Freq Liang Life Technologies. Contact: Freq Liang Life Technologies, a division of Invitrogen 9800 Medical Center Prive Rockville, Maryland 20850, USA Fax: (1) 301 610 8371 Email: fliangelifetech.com URL: 11 301 610 http://fulllength.invitrogen.com 3 192 c 170 g 117 t 14 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens

Wararyota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

(bases 1 to 642)

Li.W.B., Gruber,C., Jessee,J. and Polayes,D.

Full-length cDNA libraries and normalization

Unpublished (2001)

Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                   ALS63357. LTL0FL001_NBC4 Homo sapiens cDNA clone CS0DD004YDI7 prime, mRNA sequence.
ALS63357
ALS63357. GI:12912671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: seqref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
Location/Qualifiers
                                                                                                                                                  183
134 MetSerSerSerThrLeuTrpGlyAsnIleSerAspGlnTyrGlyArgLy 150
                                                                          167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           582 AWGTCCAGCTCCACGCTCTGGGGAAAMATYTCAGACCAGTACGGCAGGAA
                                                                        150 sThrGlyLeuLysIleSerValLeuTrpThrLeuTyrTyrGlylleLeuS
                                                                                         from: 1 to: 642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="neuroblastoma cells"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps: 1
Percent Identity: 90.099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone="CS0DD004YD17"
/clone_lib="LT1_NFL001_NBC4"
/sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to reverse of: AL563357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_block:
US-09-911-667A-2 x AL563357/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         898.00
4.854
91.584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1. .642
                                                                                                                                                                                                                                                                                              seq_name: gb_est1:AL563357
                                                                                                                                                                                                                                                                                                                                   seq_documentation_block:
LOCUS AL563357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
```

```
[ (bases 1 to 468) Smith, T.P.L., Grosse, W.M., Freking, B.A., Roberts, A.J., Stone, R.T., Gasse, W. Wray, J.E., White, J., Cho, J., Fahrenkrug, S.C., Bennert, G.L., Heaton, M.P., Laegreid, W.W., Rohrer, G.A., Chitko-McKown, C.G., Pertea, G., Holt, I., Karamycheva, S., Liang, F., Quackenbush, J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence evaluation of four pooled-tissue normalized bovine cDNA libraries and construction of a gene index for cattle denome Res. 11 (4), 626-630 (2001) Co.fact: Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25-APR-2001
                                                                                                                                                                                                                                                                                                                               437 CCNCCNGCTGTTTNNCTGTGTTGGAAGAAAATGNGCTCACTCTGTAACTC 388
                                                                                                                                                                                                                                                                                                      430
                                                                                                                                                                                                                                                                                                                                                                                                               447
                                                                                                                                                                                                                                                                                                                                                                                                                                         447 rThrProGluValTyrProThrAlaThrArgAlaLeuGlyLeuGlyThrC 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  464 ysSerGlyMetAlaArgValGlyAlaLeuIleThrProPheIleAlaGln 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               287 GCAGGGGCATGGCAAGAGGGGGCTCTCANTACTCCGTTCATCGCCCAG 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ValMetLeuGluSerSerValTyrLeuThrLeuAlaValTyrSerGlyCy 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  514 lyGlyGlyLeuGlnGluSerSerHisArgGluTrpGlyGlnGluMetVal 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGATGCTGGAATCCTCTGTGTACCTGACTCTGGCAGTTAACAGTGGCNG 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         187 crgccrccrgccrgccrccrgcrrrrrrgcccarrgagaccaaag 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BF775076 468 bp mRNA EST 2
8F3128 MARC 3BOV Bos taurus cDNA 5', mRNA sequence.
8F775076.1 GI:12122976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        537 TCTCTGAGTTTCCAGGTGTCCTTGTGACTCTGTGGATTATTGACCGCCTG
                                                                                                                                                                                               GlyArgLysLysThrMetAlaLeuCysPheValllePheSerPheCysSe
                                                                                                                                                                                                                                                  487 GGGCGCAAGAAGACCATGGCCCTGGGCTTTGTCATCTTCTCCTTCNGCAG
                                                                                                                                                                                                                                                                                                      414 rLeuLeuLeuPheIleCysValGlyArg.AsnValLeuThrLeuLeuLeu
                                                                                                                                                                                                                                                                                                                                                                                                                  PhelleAlaArgAlaPhelleSerGlyGlyPheGlnAlaAlaTyrValTy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SCysLeuLeuAlaAlaLeuAlaSerCysPheLeuProIleGluThrLysG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            137 GCCGAGNACTGCAGGAGTCCAGCCACGGGAGTGGGGCCAGGAGTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GlyArgGlyMetHisGlyAlaGlyValThrArgSerAsnSerGlySerGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               337 CACACCTGAGGTCTACCCCACGGCAACGCGGGCCCTCGGCCTGGGCACCT
                                                                                                                                                                                                                      seq_name: gb_est2:BF775076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_documentation_block:
LOCUS BF775076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Keele, J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
COMMENT
```

```
Single pass sequencing. Bases called and alt_trimmed with phred v0.989094.e. Vector identified by cross_match with the -minscore 18 and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                          /note="Vector: pCMV SPORT6; Site_1: Xbal; Site_2: Xhol;
Library made from pooled tissue from marrow, alveolar
macrophage, ovary, fetal semitendonosus muscle, and fetal
longissimus muscle."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   101 TGTATGCTGAGTTCCTTCCCATGAAAGCCAGAGCTAAATGTATTTTGCTG 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sArglleAlaThrGluAsnGlyAlaProMetProLeuGlyLysLeuIleI 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       163 TyrGlyIleLeuSerAlaPheAlaProValTyrSerTrpIleLeuValLe 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      213 IleGluValPheTrpAlaIleGlyThrValPheGluValValLeuAlaVa 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        246 alProLeuLeuLeuPheAlaValLeuCysPheTrpLeuProGluSerAla 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ArgTyrAspValLeuSerGlyAsnGlnGluLysAlaIleAlaThrLeuLy 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 TACGGCATCCTCAGTGCGTTTGCGCCCGTGTACAGCTGGATCCTGGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              euTyrAlaGluPheLeuProMetLysAlaArgAlaLysCysIleLeuLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length: 156
Gaps: 0
Percent Identity: 100.000
USDA, ARS, US Meat Animal Research Center PO Box 166, Clay Center, NE 68933-0166, USA Tel: 402 762 4366 Fax: 402 762 4390 Email: smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            from: 1 to: 468
                                                                                                                                                                                                                                                              1. .468
/organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="WARC 3BOV"
/Lissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                      BACKWARD: GTTTTCCCAGTCACGACG
Plate: 86 row: E column: 5
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                      FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                  139 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ratio: 5.186
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Align seg 1/1 to: BF775076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alignment_block:
US-09-911-667A-2 x BF775076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               809.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_scores:
                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                401
                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
```

```
/ Acce="Organ: pooled; Vector: pT7T3D-Pac (Pharmacia) with a modified polylinker; Site_1: Not I; Site_2: Eco RI; Equal amounts of plasmid DNA from three normalized libraries (fetal lung NBHLJ9W, testis NHT, and B-cell NCI_CGAP_GCB1) were mixed, and ss circles were made in vitro. Following HAP purification, this DNA was used as tracer in a subtractive hybridization reaction. The driver was PCR-amplified cDNAs from pools of 5,000 clones made from the same 3 libraries. The pools consisted of I.M. A.G.E. clones 297480-302087, 682632-687239, 726408-728711, and 729096-731399. Subtraction by Bento Soares and M. Fatima Bonaldo. " lothers
                                                                                                                                                                                                                                                                                                                                                                                              Eukaryola; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 487)
NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP), Tumor Gene Index
Unpublished (1997)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                      AW173250 487 bp mRNA EST 16-NOV-1999 xj85b11.xl Soares_NFL_T_GBC_S1 Homo sapiens CDNA clone IMAGE:2663997 3' similar to TR:Q92217 Q92217 SV2 RELATED PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: cgapbs remail.nih.gov
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
Trace considered overall poor quality
Seq primer: -40UP from Glbco
High quality sequence stop: 1.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             386 GlyValLeuValThrLeuTrpIleIleAspArgLeuGlyArgLysLysTh 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       402 rMetAlaLeuCysPheValllePheSerPheCysSerLeuLeuLeuPheI 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from: 1 to: 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length: 162
Gaps: 0
Percent Identity: 90.741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
/db_MAGE:2663997"
/clone=lib="Soares_NFL_T_GBC_S1"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to reverse of: AW173250
                                                                                                                                                                                                                                                                                                  AW173250.1 GI:6439198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_block:
US-09-911-667A-2 x AW173250/rev
313 PheArgTrpThrTeu 318
                                                451 TTTAGATGGACAACCTTG 468
                                                                                                                                                                                                                                              ;, mRNA sequence.
AW173250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4.872 96.296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     760.00
                         seq_name: gb_est1:AW173250
                                                                                                                                               seq_documentation_block:
LOCUS AW173250
                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     126
                                                                                                                                                                                                                                                                                                                                                     human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
```

419 leCysValGlyArgAsnValLeuThrLeuLeuLeuPheIleAlaArgAla 435

Tue

```
Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
1 (bases I to 742)
1 (bases I to 742)
2 (Koharta, Y., Shin-i, T., Thierry-Mieg, J., Thierry-Mieg, D., Suzuki, Y. and Sugano, S.
          Bento
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AU220193 742 bp mRNA EST 17-JUL-2001
AU220193 unpublished oligo-capped cDNA library, stage L1
Caenorhabditis elegans cDNA clone yk886g01 3', mRNA sequence.
     726408-728711, and 729096-731399. Subtraction by Soares and M. Fatima Bonaldo. " 170 c 159 g 111 t 1 others
                                                                                                                                                                                                                                                                                        415
                                                                                                                                                                                                                                                                                                                                                   465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               426 ACCTGAGGTCTACCCCACGCAACGCGGGCCCTCGGCCTGGGCACCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             448 rProGluValTyrProThrAlaThrArgAlaLeuGlyLeuGlyThrCysS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             532 ArgGlyMetHisGlyAlaGlyValThrArgSerAsnSerGlySerGlnGl
                                                                                                                                                                                                                                                    Align seg 1/1 to reverse of: AW663941 from: 1 to: 578
                                                                                                                                                               Percent Identity: 98.013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A complementary view of the C.elegans genome
                                                                                                                              151
                                                                                                                                Length:
                                                                                                                                                  Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AU220193.1 GI:14858350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Caenorhabditis elegans.
Caenorhabditis elegans
                                                                                                                                                                                                               US-09-911-667A-2 x AW663941/rev
                                                                                                                                              5.020
98.013
                                                                                                                              743.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name: gb_est1:AU220193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_documentation_block:
                                           ø
                                                                                                                              Quality:
                                                                                                                                                             Percent Similarity:
                                         137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AU220193
                                                                                                                                                                                               alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                548 u 548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  126 A 126
                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.

National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
Tumor Gene Index

L Unpublished (1997)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
This clone is available royalty-free through Li.NL.; contact the
This clone is available royalty-free through Li.NL.; contact the
IMAGE Consortium (info@inage.llnl.gov) for further information.
Seq primer: -40UP from Gibco
High quality sequence stop: 464.
Lordanism="Homo sapiens"
//db_xref="texno:9606"
//db_xref="texno:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Anote—"Organ: pooled; Vector: pT7T3D-Pac (Pharmacia) with a modified polylinker; Site_1: Not I; Site_2: Eco RI; Bqual amounts of plasmid DNA from three normalized libraries (fetal lung NbHL19W, testis NHT, and B-cell NCI_CGAP_GCBI) were mixed, and ss circles were made in vitro. Following HAP purification, this DNA was used as tracer in a subtractive hybridization reaction. The driver was PCR-amplified cDNAs from pools of 5,000 clones made from the same 3 libraries. The pools consisted of I.M.A.G.E. clones 297480-302087, 682632-687239,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 578)
                                                                                                                   485
452
                                                                    502 aLeuAlaSerCysPheLeuProIleGluThrLysGlyGlyGlyLeuGlnG 519
                                                                                                                                                                                                                                                                                                                                                                                                 519 luSerSerHisArgGluTrpGlyGlnGluMetValGlyArgGlyMetHis 535
                                                                                                                                                                                                                                                                                                                                                rgValGlyAlaLeulleThrProPhelleAlaGlnValMetLeuGluSer
                                                  PhelleSerGlyGlyPheGlnAlaAlaTyrValTyrThrProGluValTy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="IMAGE:2977987"
/clone_lib="Soares_NFL_T_GBC_S1"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   536 GlyAlaG'yValThrArgSerAsnSerGlySerGln 547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AW663941.1 GI:7456480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_name: gb_est1:AW663941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AW663941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                     452
                                                                                                                                                      287
                                                                                                                                                                                        469
                                                                                                                                                                                                                        237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
```

```
21-APR-1997
EST 21-APR-1997
EST 21-APR-1997
Et of c. elegans hypothetical protein, cosmid ZK637.1, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 371) Adman,M.D., Kerlavage,A.R., Fields,C. and Venter,J.C. 3,400 expressed sequence tags identify diversity of transcripts from human brain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: arkerlav@tigr.org
for clone avallability, additional sequence and expression
information related to this EST, please check the TIGR Human Gene
index (http://www.iigr.org/tdb/hgi/hgi.html)
Seq primer: M13 Reverse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /dev_stage="infant"
/note="Organ: brain; Vector: lafmid BA; Site_1: HindIII;
Site_2: NotI"
1 90 c 93 q 110 t 3 others
   etAlaArgValGlyAlaLeuIleThrProPheIleAlaGlnValMetLeu 483
                                                                                       3 others
                                                                                                                                                                                                    GluSerSerValTyrLeuThrLeuAlaValTyrSerGlyCysCysLeuLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The Institute for Genomic Research
9712 Medical Center Drive, Rockville, MD 20850
Tel: 3018699056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps: 0
Percent Identity: 96.748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
/db_xref="ATCC (inhost):150872"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ىد
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone_lib="Infant brain"
/sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nature Genet. 4, 256-267 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   93364420
Other_ESTs: EST57000
Contact: Kerlavage, AR
                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA349847.1 GI:2002320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      609.00
5.118
96.748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_block:
US-09-911-667A-2 x AA349847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fax: 3018699423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bioinformatics
                                                                                                                                                                                                                                                                                                                                       seq_name: gb_est1:AA349847
                                                                                                                                                                                                                                                                                                                                                                      517 euGlnGluSer 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                    54 TGATGGACTCC 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST
                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESS 10N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                      484
                                                                      467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                             /strain="N2"
/db_xref="taxon:6239"
/clone="yk886g01"
/clone_lib="unpublished oligo-capped cDNA library, stage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             289 MetProLeuGlyLysLeuIleIleSerArgGln......GluAspAr 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            302 gGlyLysMetArgAspLeuPheThrProHisPheArgTrpThrThrLeuL 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 336 LeuLeuThrThrGluLeuPheGlnAlaGlyAspValCys.....GlyIl 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                384 PheProGlyValLeuValThrLeuTrpllelleAspArgLeuGlyArgLy 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             350 eSerSerArgLysLysAlaValGluAlaLysCysSerLeuAlaCysGluT 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     :::|||:::
539 GTTCTCTAATGGAACTCAAATGGAA.......GTATGCCAAC 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 400 sLysThrMetAlaLeuCysPheValllePheSerPheCysSerLeuLeuL 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 319 euLeuTrpPheIleTrpPheSerAsnAlaPheSerTyrTyrGlyLeuVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             euPhelleCysValGlyArgAsnValLeuThrLeuLeuLeuPhelleAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            434 ArgAlaPhelleSerGlyGlyPheGlnAlaAlaTyrValTyrThrProGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               to: 742
                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps: 3
Percent Identity: 51.899
                                                                                                                                                                                                                                                                                                                                                                                                     237
                                                                                                                                              1. 742
/organism-"Caenorhabditis elegans"
             Contact: Yuji Kohara
Genome Biology Lab.
National Institute of Genetics
Yata 1111, Mishima, Shizuoka 411, Japan
Tel: 81-559-81-6855
Fax: 81-559-81-6855
Email: ykohara@lab.nig.ac.jp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1 to reverse of: AU220193 from: 1
                                                                                                                                                                                                                                                             /sex="Hermaphrodite"
/tissue_type="whole animal"
/dev_stage="L1"
154 c 140 g 201 t
                                                                                                                                                                                                                                                                                                                                                                                                 Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-911-667A-2 x AU220193/rev
Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                 3.241
80.591
                                                                                                                                                                                                                                                                                                                                                                                               619.00
                                                                                                                                                                                                                                                                                                                                                                                               Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
                                                                                                                                                                                                                                                                                                                247
                                                                                                                                                                                                                                                                                                                                                                                                                 Ratio
                                                                                                                                                                                                                                                                                                                                                                                alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                BASE COUNT
JOURNAL
                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            417
                 COMMENT
                                                                                                                                                                                                                                                                                                                              ORIGIN
```

```
: T3
```

Align seg 1/1 to: CNSO4275 from: 1 to: 868	376 LeuLeuTrpThrThrLeuSerGluPhePro	385	386	398 GlyArgLysLysThrMetAlaLeuCysPheValllePheSerPheCysSe 414	TLEULEULEUPPHETIECYSVALGIAARG ::: HIII:: TATTCCACTCTACGCCGGGGAAAGATTCATAGCAGCTGGTCA		424 ASNValLeuThrLeuLeuLeuPhelleAlaArgAlaPhelleSerGlyG1 440 11:1111::: :::	PPheGlnAlaAlaTyrValTyrThrProGluATTTCAGGCCGCTACCTTACACTCCAGAGGTAAAGGACCAGAGTAAAAAAAA			566 TIGCTTATTGAGCTCAAAAGCTCAAAAGATGTGGTGGTACCCGGGC 615 481ValMetLeuGluSerSerValTyrLeuThrLeuAlaVa 493	493 1TyrSerGlyCysCysLeuLeuAlaAlaLeuAlaSerCysPheLeuProl 510 [11] [11] [11] [11] [11] [11] [11] [1	510 leGluThrLysGlyGlyGlyLeuGlnGluSerSerHisArgGluTrpGly 526 	GlnGluMetValGlyArgGl 	041 gSerAsnSerGin 547 	seq_name: gb_est1:AW345918
231 CGGCCTTGTCTTAAAGGTGATGCTGGAGTCGTCGTGTACCTGGCTCTGT 182	492 laValTyrSerGlyCysCysLeuLeuAlaAlaLeuAlaSerCysPheLeu 508 	509 ProlleGluThrLysGlyGlyGlyLeuGlnGluSerSerHisArgGluTr 525 	525 pGlyClnGluMetValGlyArg 532 	<pre>seq_name: gb_gss:CNS04275 seq_documentation_block:</pre>		ACCESSION AL313898 PERSION AL313898.1 GL:9546782 KEYWORDS GSS; genome survey sequence. SOURCE Tetraodon nigroviridis.	ORGANISM Tetraodon nigroviridis Eukaryota: Metazoa: Chordata: Craniata: Vertebrata: Euteleostomi: Actinopterygii: Neopterygii; Teleostei: Euteleostei; Neoleleostei; Acanthomorpha: Acanthopterygii: Percomorphi: Tetraodontiformes;	REFERENCE 1 (bases 1 to 868) AUTHORS Roest Crollius.H., Jaillon,O., Dasilva,C., Bouneau,L., Fisher,C., Bernot,A., Fizames,C., Wincker,P., Brottier,P., Quetier,F.,	MEDLINE 20296633 REFERENCE 2 (bases 1 to 868) AUTHORS Crollius, H.R., Jaillon, O., Dasilva, C., Ozouf-Costaz, C., Fizames, C., Fischer, C., Bouneau, L., Billault, A., Quetier, F., Saurin, W.,	TITLE Characterization and repeat analysis of the compact genome of the freshwater pufferfish tetraodon nigroviridis JOURNAL Genome Res. 10 (7), 939-949 (2000)	JOURNAL Submitted (12-APR-2000) to the EMBL/GenBank/DDBJ databases COMMENT This sequence is a single read and was generated as part of a large scale clone-end sequencing project of the Tetraodon nigroviridis genome. For more information, please take a look at http://www.qenoscope.cns.fr/Tetraodon.	FEATURES Location/Qualifiers Source 1868 /organism="Tetraodon nigroviridis" /db.xref="taxon:99883"	/clone="040B23" /clone_lib="A" /note="Genoscope sequence ID : C0AA040CA12C1-end : T7" DDICTN 174 a 222 c 238 g 217 t 17 others	scores: Quality: 538.50 Length:	Percent Id	alignment_block: US-09-911-667A-2 x CNS04275

```
USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
Tel: 402 762 4366
Fax: 402 762 4360
Email: smith@email.marc.usda.gov
Single pass sequencing. Bases called and trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore 20
                                                                                                                                                                                   Bovidae; Bovinae; Box.

1 (Dases I to 377)

Smith, T.P.L., Grosse, M., Freking, B.A., Roberts, A.J., Stone, R.T.,

Casas, E., Wray, J.E., White, J., Cho, J., Fahrenkrug, S.C., Bennett

G.L., Heaton, M.P., Laegreid, W.W., Rohrer, G.A., Chitko-McKown, C.G.,

Keele, J.W.
                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                 Sequence evaluation of four pooled-tissue normalized bovine cDNA libraries and construction of a gene index for cattle Genome Res. 11 (4), 626-630 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /uute="Vector: pCMV SPORT6; Site_1: Xba1; Site_2: Xho1; Library made from pooled tissue from day 20 and day 40 embryos."
                           25-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AW345918 377 bp mRNA EST
15969 MARC 4BOV Bos taurus cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        464 ysSerGlyMetAlaArgValGlyAlaLeuIleThrProPheIleAlaGln 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481 ValMet.LeuGlu.SerSerValTyrLeuThrLeuAlaValTyrSerGly 496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lenyth: 120
Gaps: 2
Percent Identity: 91.667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   to: 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="MARC 4BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BACKWARR: GTTTTCCCAGTCACGACG
Plate: 8 row: B column: 9
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="pooled"
/lab_host="DH10B"
/note="Vector: pCMV S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from: 1
                                                     AW345918
AW345918.1 GI:6843628
                                                                                                                                                                                                                                                                                                                                                                                            Contact: Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 538.00
4.719
95.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Align seg 1/1 to: AW345918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_block:
US-09-911-667A-2 x AW345918
seq_documentation_block:
LOCUS AW345918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PCR PRimers
                                                                                                                               Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62
                                                                                                                  COW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_scores:
                                                                                            EST
                                                   ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Source
                                                                                                                                                                                                                                                                                                                                                  JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                   TITLE
```